

DOCUMENT RESUME

ED 305 090

IR 052 711

AUTHOR Counelis, James Steve
TITLE The University Library and the Doctoral Dissertation
in Professional Education: A Case Study.
INSTITUTION San Francisco Univ., Calif. Dept. of Education.
PUB DATE 26 Oct 88
NOTE 122p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS *Academic Libraries; *Citations (References);
Cybernetics; *Doctoral Dissertations; Higher
Education; *Library Collections; Library Role;
*Library Services; Professional Education; *Schools
of Education; Statistical Analysis; Systems
Approach

IDENTIFIERS *University of San Francisco CA

ABSTRACT

This case study provides both systemic and systematic analyses of the university library's role in the knowledge transmission function and doctoral-level research needs in professional education. Based on a self-study of the School of Education (with five doctoral programs) and two university libraries at the University of San Francisco, the report describes a study of the bibliographical citations in a representative sample of the 618 School of Education doctoral dissertations on file and cataloged in Gleeson Library. Research questions to be answered through the study are delineated, i.e., whether the university libraries possess adequate holdings and the range of holdings needed to service the research needs of doctoral students, and whether they provide supporting research services that supplement their holdings. Seven facets of the study are discussed: (1) the method of random sampling and tests of the representativeness of the sample set of 62 dissertations; (2) the two sets of variables established for the case study, i.e., the 14 identifying variables for the dissertations and the five variables for the 4,277 non-duplicate citations; (3) the interdisciplinary character of the university library; (4) a citational profile of the doctoral dissertation; (5) the range of professional literature; (6) the depth of the university collection in terms of doctoral research; and (7) the nature of full support academic information services. Various supporting materials are appended, including displays of the data analyses in 14 tables and one chart. (CGD)

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THE UNIVERSITY OF SAN FRANCISCO

School of Education

THE UNIVERSITY LIBRARY AND THE DOCTORAL DISSERTATION
IN PROFESSIONAL EDUCATION: A CASE STUDY

by

James Steve Counelis

San Francisco, California 94117-1080

October 26, 1988

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Studies serve for delight, for ornament, and for ability. Their chief use for delight, is in privateness and retiring; for ornament, is in discourse; and for ability, is in judgment, and disposition of business. For expert men can execute, and perhaps judge of particulars, one by one; but the general counsels, and the plots and marshalling of affairs, come best, from those that are learned.

--Francis Bacon, "Of Studies," Essays or Counsels, Civil and Moral, of Francis Ld. Verulam[,] Francis Viscount St. Albans [1625].

+

Universities have a distinctive task. It is the methodical discovery and the teaching of truths about serious and important things. Part of the task is to enhance the students' understanding and to train them in the attitudes and methods of critical assessment and testing of their beliefs so that they can make what they believe as free from error as possible. The discovery and transmission of truth is the distinctive task of the academic profession, just as the care of the health of the patient is the distinctive task of the medical profession, and the protection, within law, of the client's rights and interests is the distinctive task of the legal profession. The teaching of specific truths postulates a more general affirmation of the value of truth about any specific object or about any general class of objects. That truth has a value in itself, apart from any use to which it is put, is a postulate of the activities of the university. It begins with the assumption that truth is better than error, just as the medical profession begins with the belief that health is better than illness and the legal profession begins with the belief that the assurance of rights under the law is better than to be at the mercy of arbitrary power.

--Edward Shils, The Academic Profession [1983].

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PREFACE

The occasion for this case study on the knowledge transfer function of a university library and doctoral-level research was the self-study of the School of Education and the University library of the University of San Francisco. Inaugurated in the late fifties and early sixties by North Central Association, institutional self-study has the virtue of institutional "reality-testing." Be it some level or agency of government, a business, a hospital or a university, the cybernetic feedback of institutional self-study becomes "reality-testing" when the collective psyche of the institution's leadership, staff and clients are deeply motivated for change. And though self-study may confirm or not one's institutional and personal reality, self-study can (and more often than not does) lead to challenge and growth, development and perhaps to reorientation. [Glaser, et al., chap. 2]

This case study came about when Dr. William T. Garner, former dean of the School of Education, requested that I undertake this responsibility in the summer of 1987. With the sober and unsparing support of former Dean Garner and Acting Dean Dorothy S. Messerschmitt of the School of Education, along with the generous collaboration of Dean Paul E. Birkel of Gleeson Library, this case study was launched and completed. I am indebted to Dr. Virginia J. Kelsh, Kendrick's Law Librarian, for her generosity of spirit and ready helpfulness in providing information on the University's law library. I am grateful to Mr. Michael Malizia of the Dean's Office of the School of Education for his administrative assistance in furthering this project.

A great deal of professional librarianship went into this case study. Calling for valid and reliable data, the bibliographic citations were gleaned from a representative 10% random sample of doctoral dissertations ($n = 62$) in professional education. The bibliographies from each of these 62 dissertations were the sources for the bibliographical citations. These citations required coding by professional librarians, *viz.*, (a) the assignment of Library of Congress numbers to each citation; (b) the determination of whether the monograph or serial was in the University collection and coding that fact; (c) the coding of each bibliographic citation as monograph or serial; (d) the assignment of Library of Congress numbers to government documents and dissertations.

Some 5,308 citations from 62 doctoral dissertations in professional education were reviewed and coded by the professional librarian staff and their assistants. Along with their regular work load, this gargantuan task was accomplished with fidelity

and excellence. I am indebted to Dean Birkel for his support and leadership in that aspect of this case study. And I am grateful to Mr. Eric Paul Ewen, Head Catalogue Librarian, for his professionalism and most able supervision of this entire coding process. Permit me to list the following professionals and their assistants who did the important coding work: (a) Mr. John Patrick Gookin, Assistant Catalogue Librarian; (b) Mrs. Karen A. Johnson, Assistant Catalogue Librarian; (c) Mr. Mark Mir, Technical Assistant III; (d) Miss Konya Washington, Student Assistant I; (e) Miss Jodi Lui, Student Assistant II. Also, I am grateful to Mrs. Lucy del Rosario de Luna, secretary to the Dean of the Gleeson Library for her invaluable assistance in overseeing a student aide in an important task related to the statistical process of randomly selecting the sample of 62 dissertations and accurately recording the characteristics of the whole population of 618 dissertations.

A general systems theory framework and the understanding that education for the professions is an interdisciplinary inform this case study. [Counelis, 1977 & 1979] In practice, these two understandings set the professional roles and directions for the doctoral programs of the School of Education and the University collections which support them. Through these understandings, this case study for institutional self-study reflects the intent to foster the University's mission, goals and the highest of standards for professional education---the interdisciplinary field of theory and praxis in learning and teaching at all age and grade levels and in leading and administering all forms of educating environments. [Young, et al., 1983, chaps. 1, 5-7]

With reference to the doctoral programs of the School of Education and the University libraries---Gleeson and Kendrick---this case study addresses some aspects of WASC Standard 4.C and 4.D on graduate degrees and research and WASC Standard Six on the library. [WASC, 1988] However, I am mindful of the difficulty which an accrediting team has when visiting a university campus, having had that experience myself. But I was reminded of this fact during my review of Virgo and Yuro's edited ACRL 1980 proceedings, titled, Libraries and Accreditation in Institutions of Higher Education. [Virgo & Yuro, 1981]

In 1983, I was chairman of a faculty planning task force. For the president of the University, this task force prepared a report on the School of Education and its fulfillment of the University's mission and goals. The title of that report was Mission, Goals, and Deeds: A Report to the University President. This report was well received by Father John LoSchiavo, the University President. The concluding paragraph of the report reads:

The Faculty of the School of Education has developed systematically its role and relevance to the University, the Church, the community, state and nation.

This has been the historic and continuing labor of this constituent unit of the University since its creation some 32 years ago. Evolved to meet the need for professionals who served education, broadly defined, there is no doubt that the Catholic vision of God and man, the Jesuit perspective on education, and the ever changing human needs of this world have shaped and continue to shape this institution. The School of Education cannot be all things to all people; hence, the Education Faculty's focus upon the continuing interplay of theory and praxis dominating its graduate professional curricula. Additionally, the School of Education is not the whole University and many of the detailed elements in all of the goals of the University cannot be fulfilled by any one of the constituent colleges. Nonetheless, the Faculty of Education continues to find new elements and meanings in the University's mission and goals that influence and guide curricula and research, service and its morality. An historic and integral living element for human outreach, the School of Education is both priest and prophet---the teacher, the inquirer, the doer, and the seer for human good in God's grand design. [Counelis, 1980; Avis, Counelis & McDermott, 1983, pp. 30-31]

In 1983 and now in 1988, the School of Education faculty continues to strive to be the teacher, the inquirer, the doer and the seer for human good in God's grand design. Through this case study, the School of Education and the University Libraries---Gleeson and Kendrick---have symbiotically illustrated an educational environment of merit and quality through which their collective aspirations have met.

The University of San Francisco's institutional integrity that fosters scholarship and excellence is well illustrated in the University libraries' relation to the School of Education's doctoral dissertation research. My judgment on this matter is based upon an empirical understanding drawn from this case study. My hope and expectation is that others will concur in this judgment, once having read the evidence here presented.

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THE UNIVERSITY LIBRARY AND THE DOCTORAL DISSERTATION
IN PROFESSIONAL EDUCATION: A CASE STUDY

by

James Steve Counelis⁺

Background:

The institutions of the library and the profession are ancient. Since the Great Library and Museum of Alexandria [ca. 4th century B.C. - ca. 4th century A.D., it having probably more than 530,000 scrolls], the library's specific structures, contents and dynamic processes have varied over time and place. [Esdaille & Kent, 1951, p. 2b; Edelman & Tatum, 1976] However, the ends of the library have remained stable. The library has the predominant social systems function to conserve and to transmit knowledge.

Similarly, the profession is ancient and certainly ubiquitous in all societies. In his 1941 anthropological classic, The Social Role of the Man of Knowledge, Florian Znaniecki well outlines the professional as technologist, sage, scholar and exploring inquirer. The profession has the predominant social systems function for pragmatically applying knowledge to societal and human problems. [Counelis, 1979 & 1987; Znaniecki, 1940/1968]

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The library is based on communications artifacts, such as papyri and incunabula, all forms of the printed page, audio and/or visual materials, along with computer access to significant data banks. The organization of these communications artifacts is, generally, by formal and alpha-numeric discipline-oriented classification systems, such as the Dewey Decimal System, the Ranganathan Colon System, and the Library of Congress Decimal System. [Jolley, 1973; Maltby, 1972; Sayers and Maltby, 1967] Further, it is also useful to note that libraries are designed with particular clientele-usage in mind. The National Archives in Washington, D.C., IBM's business files, a fifth grade learning center's bookshelf, the Library of the University of California-Berkeley, together with the New York Public Library and the Law Library of the United States Supreme Court are American examples of the public and private archive, the elementary classroom library, the university research library, the public library and the professional library---all designed for particular clients.

The profession (or guild) has a generic four element organization. The profession's first organizing element is its personnel membership, viz., men and women with liberal educations who have experienced extensive and prolonged instruction in a profession's knowledges and skills. The second structural element is a set of professional institutions, viz., organizations for (a) formal professional education and training; (b) research

and study; (c) professional practice; (d) the profession's governance and its independence. The third formational element is a cluster of professional group motivations, viz., (a) specific and general service to others; (b) development and extension of professional knowledges and skills; (c) independence, self-governance and livelihood. The profession's fourth and final unifying element is its array of ends or goals, viz., (a) societal welfare; (b) improvement of the craft or the academy; (c) general societal approval; (d) personal and group identity; (e) satisfaction. [Callahan, 1988, chaps. 2-4; Counelis, 1961] By this generic professions model, a school or college of education is explicitly known to be within the profession of education and one of its institutions for creating specialized professional manpower in education and for research in all fields of education.

The professional school or college is a profession's institutional center for creating two types of specialized human capital: (a) new [and renewed] formally educated and trained manpower; (b) new knowledges and new skills for the profession. However, the professional fields of study are not pure disciplines, be these in the arts and architecture, business, education and Librarianship, engineering, law, medicine, the ministry, or social work. These fields of professional study and praxis are interdisciplines.

Phenomenologically, all professions function within the

confluence of the problematical in real time/real world situations. The neat formal and substantive separations found within academic and behavioral-shaping disciplines do not exist in real time/real world events. These separations are useful conventions of an intellectual order. Those who work within any of the professions understand the conceptual strategy for such boundary-creating conventions. However, the systemic and dynamic character of the natural and social world pre-empts the rationality of such intellectual order. Dynamics and interactions define every real time/real world situation as a natural complexity to be understood as a whole on its own terms. [Counelis, 1973 & 1979]

The professional observes a problematic concern as being within a system or between/and among several systems wherein it might reside. By theory, science and art, the professional establishes the systemic location of a presenting problematic concern. Again by theory, science and art, the professional proposes, applies and evaluates hypothetical descriptions and diagnoses, remedies and resolutions. [Counelis, 1973 & 1979]

Education is a profession dealing with real time/real world problematics in human capital investment and societal capital development, doing so regardless of level, curriculum, environment and type of client or faculty. Education is an interdisciplinary---an interpenetrating multi-disciplinary field of study and praxis---because of its real time/real world involvement in

learning and instruction in all areas of living. [Counelis, 1973 & 1979; Sherif & Sherif, 1969]

Dynamic cybernetic relationships exist between the university library and the professional school. Both are concerned with the transmission process of knowledge advance and the creation process of knowledge advance. [Counelis, 1987] The doctoral dissertation is one nexus wherein the intercourse between the university library and the professional school is documented. The university library and the professional school interlock learning and the inquiry methods of faculty and graduate student. [Counelis, 1987] This case study on the university library and the doctoral dissertation in professional education is about the university library's role in the transmission processes of knowledge advance, which is defined through the doctoral curriculum in professional education. [Counelis, 1977; Edelman & Tatum, 1976]

The Case Study:

Evaluation is an important cybernetic function for persons and institutions. Cybernetic functions have as their purpose "reality testing." Cybernetic functions have good effect when the results of "reality testing" are integrated within the psyche of the person and the decision-making processes of the institution. Since the 1961 founding of the Association for Institutional Research, institutional research has become the university's primary "reality-testing" process. And since 1961, the case study

has become elaborated into a sophisticated methodology through the university's practice and study of institutional research for descriptive, explanatory and evaluational purposes. [Dressel, et al., 1971; Jademus, et al., 1980; Muffo and McLaughlin, 1987] Additionally since the early 1970s, a parallel evolution of case study methodology matured through the specialization of evaluation and policy analysis fields in all contexts, especially in the governmental arena of program evaluation (more often for program efficiency rather than program effectiveness). [Callahan & Jennings, 1983, Wye & Hatry, 1988; Stenhouse, 1988; Yin, 1984] The confluence of these practical sources for case study methodology has enhanced and refined the research armamentarium in the social and behavioral sciences.

Empirical Research and the Library:

In a 1977 volume, titled, The Measurement and Evaluation of Library Services, F. W. Lancaster lists quantitative and qualitative approaches to the evaluation of library collections. For the quantitative methods, he lists: (a) the size of the collection by various methods of categorization; (b) current growth rate; (c) the relation of the size of collection to other variables such as volumes per capita and volumes per circulated item; (d) various ratios on collection expenditures; (e) the amount of within-library and out-of-library circulation. He lists, additionally, the following qualitative methods: (a) impressionistic or subjective methods; (b) evaluation against standard lists. A

review of these empirical methods demonstrates that none are appropriate for this study because their purposes are directed toward library operations and not toward determining the library's connection to the doctoral dissertation or similar levels of research. [Lancaster, 1977, chap. 5]

Herbert Goldhor edited the papers of a 1967 conference on "Research Methods in Librarianship: Measurement and Evaluation," held by the Graduate School of Library Science of the University of Illinois-Champaign/Urbana. These papers reflected empirical research for all types of libraries, including university libraries. John S. Moriarty reviews empirical studies done at Purdue University in attitude and value measurement, growth measurement, the application of operations research techniques to university library operations, cost evaluations, the measurement of library usage and its predictions, and computer simulations. Again, these studies, though very important for operations and perhaps theory development in particular fields of library science, were not related to the university library's partnership with scholarship. [Moriarty, 1968]

Since Shannon's well known 1948 electrical engineering paper on information theory, the empirical study of language and perception, of documentation and human behavior have proceeded apace. One characteristic of these studies is the empirical quantification of their units of study, their multivariate statisti-

cal treatment, and when possible, the fitting of data to curves, planes and certain topological forms. Taking a page from physics as theoretical science, the determination that a certain set of data can parsimoniously be represented through mathematical functions and their graphic representations presents the intuitive opportunity to explore the relationships among variables in terms of the inquirer's assumptions, presuppositions, or better, some explicit principle or hypothesis. Of particular interest to library and information science have been the following: (a) the macro-economic library studies of Baumol & Marcus, Lucas, and Swords & Walwer; (b) the linguistic studies done by both Zipf and Harris; (c) Bradford's scattering theory of citations within scientific documentation; (d) the Clapp-Jordan formula which evolved into the Association of College and Research Libraries standard for estimating the size of college and research library collections. [ACRL, 1986; Baumol & Marcus, 1973; Bradford, 1948, chap. 9; Bulick, 1982; Clapp & Jordan, 1965; Donohue, 1973; Hall, 1985, chap. 3; Harris, 1951; Lucas, 1982; McInnes, 1972; Swords & Walwer, 1974, chap. 4; Zipf, 1935/1965]

In 1848, C. C. Jewett of the Smithsonian Institution was an American pioneer in the systematic numerical study of bibliographical sources. But contemporary bibliographic citation studies apparently began in 1927 with the Gross and Gross study on the college library and chemical education. And since 1927, bibliographic studies have been more often than not conducted for

library management purposes. Yet a by-product of this research has been a qualitative understanding of the documentary trace of scholarship---the bibliographic citation. Fussler's 1949 national study on the research literature used by chemists and physicists is one such study, as are the following: (a) McAnnally's 1951 doctoral dissertation on the characteristics of materials used in the historical research on the United States; (b) the 1957 Emerson study on the adequacy of doctoral research engineering resources in Columbia University's libraries; (c) Sineath's 1963 doctoral dissertation, "The Relationship between Size of Research Library Collections and the Support of Research Studies"; (d) LaBorie and Halperin's 1976 study, titled, "Citation Patterns in Library Science Dissertations"; (e) the Chambers & Healey cost-benefit study on journals as viewed through master's theses in English and Education. All of these empirical citation studies provide important knowledge on the documentary traces to [and within] American scholarship. For useful surveys of citation studies in the social and natural sciences, see the articles by Fitzgibbons and Subramanyam. And of methodological interest there is Nisonger's attempt to test the reliability of two citational methods for evaluating political science collections. [Chambers & Healey, 1973; Emerson, 1957; Fitzgibbons, 1980; Fussler, 1949; Gross & Gross, 1927; Jewett, 1848; LaBorie & Halperin, 1976; McAnnally, 1951; Nisonger, 1983; Price, 1963, chap. 3; Sineath, 1963; Subramanyam, 1980]

The study of the bibliographical citations in master's theses and doctoral dissertations is well known. To the knowledge of this writer however, only one study has been done that reflected the concerns of this study, viz., the knowledge transmission between the university library and the graduate student's doctoral dissertation in professional education. The doctoral dissertation provides the documentary trace to that knowledge transmission. The 1975 study of Charles J. Popovich, Business/Economics Librarian in Lockwood Memorial Library of the State University of New York at Buffalo was this study. The title of Popovich's work is "Business/Management Research---Characteristics and Collection Evaluation: A Citation Analysis of Dissertations." Though the representative character of the 31 dissertations used in this study was not established, the variables utilized were appropriate: (a) form of publication---periodicals, monographs, serials, doctoral dissertations, newspapers, reports, working papers, manuscripts, conference papers and other miscellaneous forms; (b) periodical titles most frequently cited; (c) subject dispersion of monographs and serials; (d) time span of materials; (e) foreign language distribution; (f) type of publisher; (g) verified library ownership of all materials. [Popovich, 1975]

The professional education of librarians has been evolving in the same way as professional education evolved. A sign of that evolution is the publication of textbooks for librarians on empirical research methodology. Bush and Harter's 1980 Research

Methods in Librarianship: Techniques and Interpretation together with Swisher and McClure's 1984 volume Research for Decision-making: Methods for Librarians are two such recently published textbooks. Thus future library studies executed by professional librarians will be done with greater research sophistication than in the past, especially with the rapid computerization of library systems. A 1985 study by James J. Kopp on the history of health sciences illustrates computerized database research in library science. [Kopp, 1985] The validity and reliability of their systemic and systematic knowledge about the library as a knowledge transmission enterprise will thereby be enhanced over time. [Bush & Harter, 1980; Swisher & McClure, 1984]

Though this writer is a professor of education and not a professional librarian, this case study is one attempt to provide a systemic and systematic study of the university library's knowledge transmission function, using the University of San Francisco as the case. One cross point for the university library's knowledge transmission process and the School of Education professional education programs is located in the doctoral dissertation---the unit of study for this inquiry.

Research Questions:

By persuasion, this writer is a general systems theorist. He perceives and conceives the University of San Francisco to be a holistic social system of which the School of Education

and the Gleeson Library are integrated sub-systems. [Buckley, 1967; Immegart & Pilecki, 1973; Sutherland, 1973 & 1978; Weinberg, 1975; van Gigch, 1978] The point of their integration under consideration here is the knowledge transmission function evidenced by the interconnection between the library holdings and the doctoral student's dissertation research needs. Hence, the research questions to be answered through this study are:

(1) Do Gleeson and Kendrick Libraries possess adequate holdings to service the research needs of doctoral students in the School of Education?

(2) Do Gleeson and Kendrick Libraries possess the range of holdings to service the research needs of doctoral students in the School of Education?

(3) Do Gleeson and Kendrick Libraries provide supporting research services that supplement their holdings, given that no university library can possess all source documents required by doctoral students?

To approach the first two questions systemically and systematically, the dissertation became the unit of study. A randomly selected sample of representative dissertations was generated. [McInnis, 1970]

The Random Sample and Representativeness:

As of October 15, 1987, there were 618 School of Education doctoral dissertations catalogued and shelved in Gleeson Library. Using a student aide, these dissertations were counted and classified by the first letter of the writer's last name, program, year and gender. This was done in order to test the

success of randomization and hence obtaining the statistical assurance of an objectively representative sample of dissertations when compared to the library's population of dissertations.

A ten percent random sample of doctoral dissertations ($n = 62$) was selected through the random number generator program [ST-02] for a Texas Instrument Programmable 59 Calculator. [Texas Instruments, 1977, pp. 2/6-2/8] Having numbered sequentially the library's index file cards for the population of 618 dissertations, the sample of 62 dissertations was drawn from the population of doctoral dissertations on the library shelves and their bibliographies were photocopied. Six statistical tests to determine the representativeness of the dissertation sample were done. The Crunch Statistical Package (Version 3.11, 1987) was used for the statistical work in this case study.

The first test was a comparison of the proportions of men and women in the dissertation population and dissertation sample. These comparisons were as follows: Males: $28/62 = 45.2\%$ (sample) and $286/618 = 46.3\%$ (population); Females: $34/62 = 54.8\%$ (sample) and $332/618 = 53.7\%$ (population). Without a statistical test, it was quite evident that the proportions of males and females in the sample dissertations reflected the proportions of males and females in the dissertation population. However, the calculation of confidence intervals confirmed the same results at the $.01 \alpha$ level, viz., the null hypothesis being sustained. [See

Table No. 1 in the Appendix.]

The second test of the representativeness of the sample set of dissertations was a comparison of the doctoral program proportions between the dissertation population and the dissertation sample. For each of the five doctoral programs---Curriculum and Instruction, Educational Psychology and Counseling, Multicultural Education, Organization and Leadership, and Private School Administration, confidence intervals were calculated. The same test results obtained. For all doctoral programs, there was no statistical difference between the program proportion in the population of dissertations and the program proportion of dissertations in the sample. The test's statistical significance had been set at the .01 α level. [Table No. 2 in the Appendix.]

The third test to determine the representativeness of the dissertation sample was a confidence interval test of proportions for each year in which dissertations were approved. At the α level of .01, no statistical difference was found between the dissertation population and dissertation sample proportions for each year. [See Table No. 3 in the Appendix.]

The fourth and fifth tests were on the general distribution of dissertations across the doctoral programs of the University's School of Education. These tests examined whether the proportional distribution of the doctoral dissertations written

by men and women were comparatively the same for both population and sample, within each of the five doctoral programs, viz., Curriculum and Instruction, Educational Psychology and Counseling, Multicultural Education, Organization and Leadership, and Private School Administration. By program, confidence intervals were calculated for both male and female proportions in the dissertation population and the dissertation sample. For both genders in each program, there was no statistical difference between the general proportions in the dissertation population and the dissertation sample. These tests were set at the .01 α level. [See Tables 4 and 5 in the Appendix.]

The sixth and last test to determine the representativeness of the dissertations in the sample was the use of the first letter of the author's last name. For each letter, the confidence intervals were calculated in order to compare the letter's proportions for both the dissertation population and the dissertation sample. For each of the letters tested, no statistical difference was found between a letter's proportion of the dissertation population and the same letter's proportion of the dissertation sample. The null hypothesis was sustained, the .01 α level having been being selected. [See Table 6 in the Appendix.]

Given these six statistical tests, the 10% random sample of 62 dissertations drawn from the population of 618 dissertations was determined to be representative of its population. Gen-

der, program, year, and first letter of the author's last name were the variables used to compare statistically their proportions in the dissertation population and the dissertation sample. Through each test of proportions by confidence intervals, the null hypothesis was sustained, an α level of .01 having been chosen. The randomization process in selecting a representative dissertation sample proved to be successful. The coding of the citations in each bibliography remained as the next methodological process.

The Dissertation Variables:

To accomplish the task of quantifying the required data, standardized coding procedures were required. Coding procedures imply that variables were clearly defined. There were two sets of variables established for this case study: (a) the identifying dissertation variables: case number, author's full name, full title of the dissertation, year, program, the author's gender, and the random number used to select the dissertation; (b) the citation variables: the assignment of a Library of Congress decimal number to each citation, the verification of each published citation, the designation of monographs and serials, the coding of those citations that are not in the university collection, and the noting of unpublished citations. The detailed procedures for this coding are given in the Appendix. The professional librarians of Gleeson Library did all of the citational coding. For statistical purposes, it is important to note that the dissertation

variables were alphanumeric and the citation variables were numeric.

To profile the sample dissertations as a set, the variables must be delineated. [Groos, 1968] There are fourteen alphanumeric variables:

- (1) CASE NO.;
- (2) NAME: Author's last name;
- (3) GENDER: Male/Female;
- (4) YEAR: Year of dissertation's approval;
- (5) PROGRAM: Curriculum & Instruction (C-I);
Educational Psychology & Counseling (EP-C);
Multicultural Education (ME);
Organization & Leadership (O-L);
Private School Administration (PSA);
- (6) TOTALCIT: Total number of citations in dissertations;
- (7) CITA1: Number of verified citations in University collection;
- (8) CITA2: Number of verified citations not in University collection;
- (9) CITA3: Number of unverified citations;
- (10) CITA4: Number of unpublished material citations;
- (11) NDTOTCIT: Total number of non-duplicate citations;
- (12) NDCITA1: Number of non-duplicate verified citations in the University collection;
- (13) NDCITA2: Number of non-duplicate verified citations not in University collection;
- (14) INCOLPCT: Percent verified citations in University collection.

The tables in this study will use these variable names; hence, their listing here.

In the reading of citation studies, their methodologies were not explicit enough for the reader to know whether the citation frequencies and proportions were based upon duplicate or non-duplicate citation counts. From these studies, one presumed that these were non-duplicate citations. The further question was raised in this writer's mind: Did the differences in absolute numbers between non-duplicate and duplicate citation frequencies make statistically significant differences in their proportions. Additionally, it was expected that the Pearson correlation between non-duplicate and duplicate citation counts would be positive and statistically significant, though the sizes of these correlations for the whole sample of dissertations and the dissertations for the separate doctoral programs were speculated to be only mid-ranged.

First, the expectation that there would be moderately positive Pearson correlations between duplicate (CITA1) and non-duplicate (NDCITA1) within-collection citations did not obtain. Rather, the Pearson correlations were found to be of a rather high order ($r = .80+$), with a statistical α of .001, the Multicultural Program being the exception with a .01 α level. See the following: (a) Total sample of 62 dissertations: $r = .85$ (52 df; $\alpha = .001$); (b) Curriculum & Instruction Program - 10 disserta-

tions: $r = .92$ (8 df; $\alpha = .001$); (c) Educational Psychology & Counseling Program - 15 dissertations: $r = .87$ (13 df; $\alpha = .001$); (d) Multicultural Program - 10 dissertations: $r = .81$ (8 df; $\alpha = .01$); (e) Organization & Leadership Program - 24 dissertations $r = .88$ (22 df; $\alpha = .001$). The Private School Administration Program, being represented by only three dissertations, could not have a meaningful correlation coefficient calculated.

Second, the testing of the differences of proportions between duplicate (CITA1) and non-duplicate (NDCITA1) citations for the whole sample, the four programs (omitting Private School Administration), and the 62 dissertations was done. For the whole set of 67 confidence interval tests of proportions, their null hypotheses were sustained at the a .001 α level. Hence, these tests established that the derivative differences in proportions between duplicate (CITA1) and non-duplicate (NDCITA1) citations were not statistically significant at any of the three levels of aggregation---the whole sample, the program and the dissertation. The importance of this finding is methodological for this case study and for citation studies in general if this finding were sustained: the absolute differences in frequencies in no way distorted the proportional distributions of citations at each level of aggregation. This methodological finding means that multiple citations arising from periodicals and anthological sources would not distort the relative sizes of the citation aggregates, be these at the levels of the whole sample, the pro-

grams or the dissertation. [See Table No. 7 in the Appendix.]

The University Library as a Whole:

Education is an interdiscipline by nature. It is an interpenetrating multi-disciplinary field of study and praxis because of the professional's real time/real world involvement in learning and instruction. Thus as an interdiscipline, its research qualitatively requires a university library to be comprehensive in subject matter scope. A significant professional library measure is found in the application of Association of College and Research Libraries' Formula A to the University's collection. [ACRL, 1986]

The Appendix contains the June 1, 1987 WASC report Table 3, titled, "Application of ACRL Formula for Collection Size of Gleeson Library." By Formula A, the recommended holdings for Gleeson Library was computed to be 513,100 volumes. Gleeson's holdings were 541,577 volumes. These calculations establish the fact that the Gleeson's collection is 105.6% of the recommended holdings as calculated by Formula A, viz., $541,577/513,100 = 105.6\%$. Gleeson Library is a select depository for U.S. federal documents. Gleeson possesses 163,019 federal documents and 15,062 California state documents, totaling some 178,081 government documents. [Stubbs, 1986]

The Gleeson Library's statistics as of May 31, 1988 were

calculated by Dean Paul E. Birkel just before completing this case study. These statistics were: (a) Books: 424,350 volumes; (b) Bound Periodicals: 83,302 volumes; (c) Microfilm Reels: 9,412 reels; (d) Microfische Volume Equivalent: 40,243 volumes; (e) Holdings Total (excluding government documents): 557,307. Additionally, the federal documents increased to 169,017 or some 3.7%; and the California state documents increased to 15,832 or some 5.1%, both between the AY 1986-1987 and AY 1987-1988. Using the 1987 Formula A calculation for recommended holdings at 513,100, the ACRL calculation became $557,307/513,100 = 108.6\%$. In one academic year, the whole Gleeson collection increased by a noteworthy 3%.

A significant documentary resource for the School of Education doctoral programs has been the University's Kendrick Law Library. Kendrick possesses 102,700 volumes and 104,500 volume-equivalent of microforms, making the total collection 207,200 volumes. Of course, this total did not including its serials collection. Additionally, Kendrick Law School Library is a select depository for California state government documents. Dr. Virginia J. Kelsh, Law Librarian for Kendrick Library, provided this writer with August 1988 statistics from her report to the American Bar Association's Section of Legal Education and Admissions to the Bar. Kendrick's volume collection increased to 105,735, a 3.0% increase; and the volume-equivalent of microforms grew to 109,994, a 2.6% increase. The total number of Kendrick

rose to 215,729. Between the AY 1986-1987 and AY 1987-1988, the overall rate of volume growth for Kendrick Library was 3.8%. The growth rates of Gleeson Library at 3.0% and Kendrick Library at 3.8% are reasonable and excellent. [See, ABA Fall 1988 Collection Report of the University of San Francisco Law School in the Appendix.]

From the point of view of the size of the collection for the School of Education's doctoral programs, Gleeson Library exceeded the ACRL Formula A standard. Additionally, the Kendrick Law School Library as a significant documentary repository for doctoral research was underscored. However, the qualitative character of the Gleeson collection will be known by three sets of measures: (a) the range of disciplines and professional praxis literature of the bibliographically cited works that were in the Gleeson holdings; (b) the proportion of bibliographically cited works that were found to be in the Gleeson Library; (c) the proportion of bibliographically cited works in education and non-education fields that were found to be in Gleeson Library.

Citational Profile of the Doctoral Dissertation:

Globally, there were 5,308 bibliographical citations [monographs and serials] in the whole set of 62 dissertations. The arithmetic mean for the citations per dissertation was 85.61 [TOTALCIT]. In terms of the count of non-duplicate bibliographical citations, there were 4,277 of these with 68.98 being the

arithmetic mean of non-duplicate citations per dissertation (NDTOTCIT).

Of course, not all dissertations had non-verified citations and unpublished materials citations. Hence, there were 55 dissertations having some 271 unverifiable bibliographical citations, with an arithmetic mean of 4.93 such citations per dissertation (CITA3). Additionally, there were 174 unpublished materials citations, with 4.24 citations per dissertation being the arithmetic mean for the set of 41 dissertations (CITA4). [See Table No. 8 in the Appendix.]

Comparable data for the five doctoral programs of the School of Education were placed in Table No. 8. In decreasing order, these programs' dissertations had the following arithmetic means for bibliographic citations per dissertation (TOTALCIT): (a) Multicultural Education: $m = 101.50$ ($n = 10$); (b) Curriculum and Instruction: $m = 89.50$ ($n = 10$); (c) Organization and Leadership: $m = 83.67$ ($n = 24$); (d) Educational Psychology and Counseling: $m = 81.53$ ($n = 15$); (e) Private School Administration: $m = 55.67$ ($n = 3$). [See Table No. 8 in the Appendix.]

Dissertation citation studies in other fields were instructive. Emerson's 1957 Columbia University study of twenty-three 1950-1954 engineering dissertations yielded an arithmetic mean of 32.87 (756/23) citations per dissertation, incorrectly

published as 38.8 citations per dissertation. [Emerson, 1957] Popovich's study of business and management doctorates yielded an arithmetic mean of 90.48 (2805/31) citations per dissertation. [Popovich, 1975, Table 4] Given the similar character of the subject matter, it appeared reasonable that the social sciences' characteristics of business and management doctorates when compared to the social sciences' characteristics of professional doctorates in education could yield arithmetic means in the same order of magnitude. This was the case here. Therefore, the measures for the variables which described this study's sample set of dissertations appeared to be reasonable.

The Range of Professional Literature:

How was the subject matter range determined for the professional literature found in dissertations? Taking an inventory of the Library of Congress alphabetic subject matter categories of the bibliographic citations found in each of the dissertations, a useful result was attained. In Table No. 9, twenty-three alphabetic Library of Congress subject matter categories were cross-classified by the five doctoral programs. For each doctoral program, the percent of dissertation subject matter categories in which bibliographic citations were found to be following: (a) Curriculum and Instruction (13/23 = 56.5%); (b) Educational Psychology and Counseling (14/23 = 60.9%); (c) Multicultural Education (20/23 = 87.0%); (d) Organization and Leadership (19/23 = 82.6%); (e) Private School Administration (9/23 = 39.1%).

When an inventory of the Library of Congress topical categories was made for those citations that were not in the University collection, in each doctoral program the number of subject categories were fewer in number (and hence lower in percent) than for those counted for the within-collection citations given above. Hence, the disciplinary spread of those citations that were not part of the University collection was narrower than the span of disciplines for within-library citations.

Three Library of Congress subject matter categories had no citations from any of the sample's dissertations. These LC subject matter categories were: (a) S: Agriculture; (b) U: Military Science; (c) V: Naval Science. The citations in these topical categories were not found in this sample of dissertations ought not lead one to infer that these subject matters could not be found in some of the other dissertations of the population. Indeed, there would be a great likelihood that dissertations with these topics could be found inasmuch as the School of Education has doctoral students from many occupations, including the military, nursing, business, the ministry, counseling, as well as the many occupations within higher education and the lower schools. An example of such a dissertation is one written by a former student of this writer, Dr. Louis M. Mc Dermott. The title of his study was The History of the Deck Curriculum---California Maritime Academy, 1929-1983. His 1984 dissertation would probably involve naval science (V) citations. [Library of Congress, 1978]

The extended range of Library of Congress subject matter categories in the dissertation sample was quite in keeping with the nature of the interdiscipline called education. Popovich's 1975 study of subject dispersion in business and management dissertation citations across the Library of Congress alphabetic spectrum provided a strikingly similar pattern. [Popovich, 1975, Table 8] With education and business being interdisciplines, their broad disciplinary range was expected. [See Table 9 in the Appendix.]

The University Collection and the Dissertation:

The breadth of the dissertation literature in the interdiscipline of education was a telling fact. However, the depth of the university collection for doctoral research in professional education was another important fact to be learned about the University's Library. The data was placed in Table 8. Descriptive statistics on the percent of verified citations to monographs and serials that were in the University collection (INCOLPCT) were placed in this table. From the representative randomized sample of 62 dissertations, the following fact was gleaned: For the sample set of dissertations, the arithmetic mean percent of the verified bibliographic citations in the University collection was 69.5% (INCOLPCT). This fact meant that, on the average, the doctoral students in the School of Education programs were able to procure nearly 70% of their dissertations' bibliography from the University's collection. This reasonably high level of availabil-

ity of bibliographic items was across the broad spectrum of Library of Congress subject matter categories noted above. Depending on the doctoral program, the arithmetic mean percent of bibliographic cited monographs and serials in the University collection ranged from 63.05% to 76.96%. With this empirical evidence, the judgment of this writer is that the Gleeson collection competently supports doctoral level research in professional education. Remembering the fact and recurring theme in the professional library science literature that no university library can possess every bibliographic item in all fields, this writer believes that the University of San Francisco Gleeson Library has well supported (and continues to support) doctoral student research very well. [Edelman & Tatum, 1976, p. 226] Further, Gleeson Library has been complemented ably by the Kendrick Law Library with its specialized collection in law being available to doctoral students in professional education. [See Table 8 in the Appendix.]

From a 1951/1953 study by Stevens on 1930-1948 dissertations done at Washington University (St. Louis, MO), University of Michigan (Ann Arbor, MI) and University of Illinois (Champaign/Urbana, IL), this writer was able to extrapolate from tabulated data that 62.8% of the education doctoral dissertation citations were collectively found in these three university libraries. [Stevens, 1953, Extrapolation from Table 5] Though this study is 37 years old, its evidence suggested, tenuously,

that the arithmetic mean across the School of Education programs of 69.5% was a realistic statistic for the bibliographic cited works within the University's collection. Also, it was instructive to learn from Emerson's 1957 study on Columbia University's 23 doctoral dissertations in engineering the following extrapolated fact: Combining monographs and serials, Columbia University libraries held 57.4% of all dissertation citations. [Emerson, 1957, p. 460]

Additionally, Sineath found in 1970 that a medium sized university library (Colorado State University: 500,000+ volumes) contained "a surprisingly high proportion of the faculty publications in both [University of] Illinois and [University of] Michigan faculty research studies." Colorado State University had 74.89% of the citations held by the University of Illinois Library and 67.95% of the citations held by the University of Michigan Library. Michigan and Illinois each had about 4 million volumes. Sineath's study covered all academic fields of graduate research. Unfortunately, he did not separate the academic and professional disciplines. [Sineath, 1970, pp. 38, 74, 87] Sineath's study suggested the following proposition: The size of a university collection was related to faculty research (and therefore related to doctoral dissertations), with the caveat that the size range of university libraries was relatively wide, viz., above 500,000 volumes. Given that the ACRL standard was met by Gleeson Library by 108.6% over the Formula A computations (557,307/513,000),

Sineath's findings and the ACRL formula were empirically joined and both were well illustrated in Gleeson Library of the University of San Francisco. [ACRL, 1986]

Another fact was established on the relation between the University library and the doctoral dissertation. Given the proportional distribution of dissertations over the five doctoral programs, there were expected program differences in the proportions of the verified citations that were found in the Gleeson collection. Six t-tests for independent groups on the variable "the mean of the proportion of verified citations in the University collection" [INCOLPCT] were done. For the six pairs of programs, the results were all the same. The six null hypotheses were sustained by the Crunch Software Package setting the .05 α level, viz., there was no statistically significant difference between any pair of programs on the variable "the mean proportion of verified citations in the University collection." A seventh t-test was done on this same variable in terms of gender. Again, the null hypothesis was sustained, the α level having been set at the .05 level. Regardless of the doctoral students' gender or program, the university library served, thusly, all the doctoral students equitably. Private School Administration being statistically represented by only three dissertations, no t-test with significant statistical meaning was possible. [See Table 10 in Appendix.]

Two other qualitative measures for the Gleeson collection were developed to estimate the depth of the collection. These measures were the proportions of education and non-education dissertation citations (monographs and serials) in Gleeson Library.

From the citations in the dissertation sample, the following statistics proved to be meaningful. For education citations, 67.1% of the cited monographs and serials were in the University collection. For non-education citations, 70.3% of the cited monographs and serials were in the University collection. A review of the five doctoral programs showed that the percentage of education cited monographs and serials in the Gleeson holdings ranged from 62.1% (Organization and Leadership) to 76.9% (Educational Psychology and Counseling). Similarly, the percentage of non-education monographs and serials in the Gleeson collection ranged from 63.1% (Multicultural Education) to 78.0% (Curriculum and Instruction). Hence, the disciplinary depth the Gleeson collection competently supported doctoral level research in professional education. [See Table 11 in the Appendix.]

A collaborative measure for disciplinary depth was the proportion of Library of Congress topical categories within its L: Education classification in which the cited education monographs and serials were within the University collection. Using the 1978 LC Classification Outline, these were the eleven L:

Education categories: (a) L: General Education; (b) LA: History of Education; (c) LB: Theory and Practice of Education; (d) LC: Special Aspects of Education; (e) LD: Individual Institutions (universities, colleges and schools) in the United States; (f) LE: Individual institutions (universities, colleges and schools) in America, except the United States; (g) LF: Individual institutions (universities, colleges and schools) in Europe; (h) LG: Individual institutions (universities, colleges and schools) in Asia, Africa and Oceania; (i) LJ: Student fraternities and societies in the United States; (j) LT: Textbooks. [See Table 12 in the Appendix.]

Three out of the eleven Library of Congress L: Education categories were not used. These topical categories were LE-LG, viz, Individual institutions (universities, colleges and schools) in America except the United States, and in Europe, Asia, Africa and Oceania. This left eight L: Education categories in which were found the cited education monographs and serials that were within the University collection.

For the five doctoral programs, the following Library of Congress subject matter category proportions within the L: Educa-
tion class were found: (a) Curriculum & Instruction: $6/8 = 75.00\%$; (b) Educational Psychology & Counseling: $6/8 = 75.00\%$; (c) Multicultural Education: $6/8 = 75.00\%$; (d) Organization and Leadership: $7/8 = 87.50\%$; (e) Private School Administration: $5/8$

= 62.50%. By these proportional measures, the range of proportions for the eight L: Education subject matter categories (which contained education works within the University holdings) was excellent. That range spanned from 62.50% (Private School Administration: 3 dissertations) to 87.50% (Organization & Leadership: 24 dissertations).

A complementary measure to these percentages is the same inventory measure for those citations which were not in the University collection. For all five programs, the number (and hence the percent) of Library of Congress L: Education categories was lower than for the within-library citations inventory of Library of Congress L: Education categories. Thus the disciplinary span for out-of-library citations was substantially narrower than the disciplinary range of the within-collection citations. This finding was also noted for the inventory taken of the total set of 23 Library of Congress topical categories for the within-collection and out-of-collection citations.

From the viewpoint of the School of Education, Gleeson Library is a significant curricular element in its doctoral programs. Using the bibliographic citations derived from the representative sample of dissertations, the university library collection could be statistically described and understood as a whole. The following two-part statistical study was done to describe that wholeness. Not unrecognized though not often stated in the

professional literature on librarianship, an important premise about library wholeness is the following: The university library as a system (and indeed any library system) is defined by the materials within its collection, the materials not in its collection, and by the library's access to required material when not immediately available in its collection.

The frequency distributions of education citations (in and out of the collection) for the five programs described a significant segment of the Gleeson holdings. A chi-square test of independent samples was calculated. The computed chi-square statistic was 24.95 (4 df), this being statistically significant at an α .001 level. (The tabled chi square statistic was 18.46, with 4 df and an α = .001) The pattern of cited education monographs and serials in and out of the library (and across programs) could not, therefore, have occurred except by chance once in a 1000 times.

Likewise, a chi-square test was done on the frequencies of non-education monographs and serials in and out of the university collection. The computed chi-square statistic was 32.32 (4 df; α = .001). Here too, the pattern of non-education works for the five doctoral programs was statistically significant, it occurring by chance only once in a 1000 times.

Construing Gleeson's comprehensive collection as holis-

tically relevant to doctoral-level study, these two statistical tests on both education and non-education monograph and serials citations [that were in and out of the Gleeson collection] demonstrated the following: Empirically, these two chi-square studies more than suggested that this holistic pattern of university library holdings for the five doctoral programs was neither a happy coincidence nor a random institutional phenomenon. Rather, the whole of the Gleeson collection portrayed here is a design for professional degrees in education, including the doctorate with its significant research component. [See Tables 13 and 14 in the Appendix.] Of particular interest in this regard is Miss Hille Sonin's 1988 draft paper on a "Collection Management Policy" for Gleeson Library. Miss Sonin is the head the Acquisitions Department of Gleeson; and she chaired the Gleeson Library Committee on Collection Development Policy, the above noted draft reflecting Gleeson's professional planning approach to meeting the scholarly needs of undergraduate and graduate students. [Oberg, 1988; Sonin, 1988]

A holistic conception of the role of the University collection viewed through the experience of the doctoral dissertation writer was gained through a factor analytic study. As noted above, one must remember that a university library is defined for the dissertation writer through the materials which are in and out of its collection. This principal components analytic study was done with the following citational variables: (a) the number

of verified citations in the university collection [CITA1]; (b) the number of verified citations not in the university collection [CITA2]; (c) the number of unverified citations [CITA3]; (d) the number of unpublished materials citations [CITA4].

Through this principal components analytic study, two factors were defined: (a) Factor #1: the extra-library materials factor: CITA3 [.903] and CITA4 [.810]; (b) Factor #2: the library materials factor: CITA1 [.878] and CITA2 [.832]. The library materials factor [Factor #2] was composed of the verified monographs and serials that were both in and out of the library collection. The extra-library materials factor [Factor #1] consisted among other things of unverified foreign publications, psychological testing materials, behavioral science measurement instruments, fugitive and privately published materials, along with unpublished manuscripts, holographic correspondence, interviews, and audio/visual materials not within the purview of the library. This comprehensive two-factor description of the doctoral dissertation writer's scholarly sources in relation to the university library was a naturalistic one, true to the experience of all scholars. Though the place of the university library was always at the core of scholarship, the scholar's informational needs usually outstripped his or her specific library's resources, no matter where the scholar would be. Hence, the derived requirement to have a full academic information support service within the university library. For serious scholarship, interlibrary loan

services and the direct on-line access to information databases became the pattern for full academic information services. [See Chart No. 1 in the Appendix.]

Full Support Academic Information Services:

Question 3 reads: Do Gleeson and Kendrick Libraries provide supporting research services that supplement their holdings, given that no university library can possess all source documents required by doctoral students? This writer believes that they do.

It is praiseworthy that Gleeson Library has a relatively large number of computer search data bases which are accessible through the professional computer search services, headed by Mr. Gregory B. Swalley. The following on-line computer services are available: (a) Dialog (prime time service) and its non-prime time service Knowledge Index; (b) BRS: Bibliographic Retrieval Service (prime time service) and its non-prime time service After Dark; (c) Medline: medical and health sciences fields; (d) CAS: Chemical Abstracts On-Line; (e) Finsbury Data Services: London---European data companies across fields; (f) Questel: Paris---an international multi-language data base across fields; (g) Dow-Jones News Retrieval. These seven academic information retrieval sources appropriately complemented the Gleeson collection and supported the doctoral-level research of graduate students in the School of Education.

Kendrick Law Library complements these seven on-line data retrieval services of Gleeson Library with the following three resources: (a) Westlaw; (b) Lexis; (c) Legaltrac. Also, the Law Library has installed an on-line modem connection with the libraries of the University of California.

Gleeson Library provides interlibrary loan services. By use of the On-Line Union Catalogue [18+ million records] of the Dublin (OH) firm, On-Line Computer Library Center, the reference librarians procure location information on books and serials. Thereafter, requested books and photocopies of journal articles are procured through Interlibrary Loan Service.

The Appendix of this study has the "Interlibrary Service Annual Report: 1987-1988" [covering AY 1983-1988] and the "Computer Search Service Annual Report: 1987-1988" [covering AY 1985-1988]. The level of interlibrary loan service is quite high across the board, running over 800 items during AY 1987-1988. Unfortunately, the Library staff did not categorize graduate students by degree program. Further, the School of Education provided the second highest number of users of the computerized bibliographic search services in both 1986-1987 {n = 280} and 1987-1988 {n = 368}. The College of Professional Studies' had the highest number of users of Gleeson's computer search service. Gleeson's Interlibrary Loan Service and the Computer Search Services provided full support academic information services for

both doctoral-level and faculty research in the School of Education.

Conclusion:

To provide the answer to the three questions posed at the beginning of this case study, a 10% representative random sample of 62 dissertations was selected from a total set of 618 dissertations on the shelves of Gleeson Library in mid-October 1987. That sample was shown to be representative by four statistical tests, the details of which were reported earlier. Some 5,308 citations---monographs and serials---were found in the dissertation sample. The arithmetic mean of 85.61 citations per dissertation was calculated from the representative sample. Of course, the study details the arithmetic mean/dissertation statistic for each of the five doctoral programs.

Question 1 reads: Do Gleeson and Kendrick Libraries possess adequate holdings to service the research needs of doctoral students in the School of Education? The facts of this case study leads this writer to assert that they do. There are three sets of facts which affirm this writer's judgment.

Professional acceptability of library holdings relies, initially, upon the calculations which demonstrate that Gleeson Library has exceeded the ACRL Formula A with the percentage computed to be 105.6% As of May 31, 1988 end of the university

fiscal year, the ACRL Formula A percentage was calculated to be 108.6%, a substantial gain of 3%.

The mean percent of within-library citations for the 62 dissertations in the sample was 69.5%. The same statistic for each of the five doctoral programs were found to be: (a) Curriculum & Instruction: 75.0%; (b) Educational Psychology & Counseling: 63.5%; (c) Multicultural Education: 63.1%; (d) Organization & Leadership: 72.1%; (e) Private School Administration: 72.1%. Therefore, the proportions of within-library citations ranged from two-thirds to three-fourths. As a criterial range for adequacy of holdings, these proportions of within-library holdings were quite excellent.

The accessibility of library resources to all doctoral students was another criterion for Gleeson Library adequacy. With seven t-tests on the variable "mean percent of verified citations in University collection" for gender and programs, the null hypotheses were sustained at the α .05 level for all t-tests. The substantive meaning of these statistical test results rest on the fact that doctoral students in all School of Education programs regardless of gender were equitably served by the University collection. Hence the University library was equitably accessible, regardless of gender and doctoral program.

Question 2 reads: Do Gleeson and Kendrick Libraries pos-

sess the range of holdings to service the research needs of doctoral students in the School of Education? This case study leads this writer positively to assert yes. There are three sets of statistical facts which affirm this writer's judgment.

The first fact is: When within-library citations were distributed across the the 23 Library of Congress subject matter categories, three categories were not used. Hence 86.96% (20/23) of the Library of Congress topical categories demonstrates one measure of the range of subject matter supported by Gleeson Library. The following are the proportions of the LC categories for the five doctoral programs: (a) Curriculum & Instruction: 56.5% (10 dissertations); (b) Educational Psychology & Counseling: 60.9% (15 dissertations); (c) Multicultural Education: 82.6% (10 dissertations); (d) Organization & Leadership: 82.6% (24 dissertations); (e) Private School Administration: 39.1% (3 dissertations). The range of proportions for Library of Congress subject matter categories exhibited for within-library citations affirms this writer's judgment that the scope of Gleeson's collection ably supports doctoral research. There is an additional complementary and supporting fact for this writer's judgment: The range of proportions is narrower for the out-of-collection citations placed in the identical Library of Congress topical categories [across the five doctoral programs] than for the within-library citations.

The second fact is: When within-library education citations were distributed across the eleven Library of Congress L: Education subject matter categories, eight out of the eleven, or, 72.73% of the education subject matter categories were covered. And when these three L: Education subject matter categories were reviewed, they covered topics on foreign educational institutions. The following are the proportion of within-library education citations by doctoral program: (a) Curriculum & Instruction: 75.0%; (b) Educational Psychology & Counseling: 75.0%; (c) Multicultural Education: 75.0%; (d) Organization & Leadership: 87.5%; (e) Private School Administration: 62.5%. The range of proportions exhibited here affirms this writer's judgment that the subject matter scope of the Gleeson collection within-library education citations capably supports doctoral level research in professional education. Again, there is a collateral finding which adds weight to this writer's judgment: This finding is that the range of proportions is narrower for out-of-library citations in the Library of Congress L: Education topical categories than for the with-in-collection citations.

The third statistical fact on the subject matter range of bibliographic citations was in terms of the education and non-education citations. For the education citations, the mean percent of within-library citations was 67.1%. And for the non-education citations, the mean percent of within-library citations was 70.3%. Kendrick Law Library supplements the broad topical

range of materials found in the Gleeson collection. These proportions on education citations and non-education citations affirm this writer's judgment that Gleeson's collection supports well doctoral-level research.

With reference to the third question on supportive research services that supplement the Gleeson and Kendrick collections, this writer judged these superior. Gleeson provided seven on-line computer data search services; and Kendrick complemented Gleeson with its three legal search services, along with a modem tie to the libraries of the University of California. Gleeson Library's direct tie to On-Line Union Catalogue speeds up the interlibrary loan processes for request books and photocopies of journal articles. The computerized bibliographic resources of the University of San Francisco are second to none.

Through this case study, this writer has come to know and, therefore, believe that the University of San Francisco's assets in the Gleeson and Kendrick Libraries are excellent and provide the appropriate range and depth of subject matter for doctoral research in professional education. Collectively, these two libraries provide a reasonably high percentage of the research monographs and serials. Both of these libraries are very well supported by 12 first-rate on-line bibliographic and data retrieval services and by an outstanding interlibrary loan service. Such complementary services are necessary because no

library can be totally self-sufficient. The libraries of the University of San Francisco function competently and cooperatively in academic service for doctoral research in professional education.

The scholarly integrity of the University of San Francisco was documented. This scholarly integrity was manifested through the excellence of the Gleeson and Kendrick collections and the high grade academic information support services in on-line bibliographic data retrieval and interlibrary loan. This scholarly integrity was demonstrated by the professional librarian's execution of the knowledge transfer function---their able support of the doctoral-level research in professional education, this research being conducted through the School of Education faculty and their graduate students.

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APPENDICES

THE UNIVERSITY OF SAN FRANCISCO
School of Education

School of Education Library Research Study

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The List of Dissertations in the Random Sample

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tions of Other Private Universities. [1979]

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A BRIEF BIBLIOGRAPHIC NOTE

by

James Steve Counelis

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The pursuit of this library case study brought this writer into a new arena of professional literature. I have had two doctoral students who have completed dissertations in library administration; and I have a third doctoral student now working on the historical evolution of theological school librarianship in the United States. However, I am not a professional in the area of library science. [Lucas, 1982; Lunardi, 1986]

My needs were for the empirical literature related to my research concerns in bibliographic citation studies. However, an extensive library science literature is published that can be broadly described as dealing with the interpretative, pragmatic and operational concerns of the professional librarian.

Through a computer search and several bibliographical articles, my exploration brought me to the appropriate materials which I later used in this case study. The following citations proved to be the most beneficial. I am indebted to the following professional librarians of Gleeson Library for their bibliographical assistance: Mrs. Judith S. Wainwright, Mr. Ivan L. Hudson, Ms Vicki Rosen, Mr. Gregory B. Swalley, and Mrs. Kathleen Ann Woo.

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Thomas E. Nisonger, "An Annotated Bibliography of Items Relating to Collection Evaluation in Academic Libraries, 1969-1981," College & Research Libraries, 43, no. 4 (July 1982): 300-311.

Signe Ottersen, "A Bibliography on Standards for Evaluating Libraries," College & Research Libraries, 32, no. 2 (March 1971): 127-144.

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The following are the two doctoral dissertations in library administration which I chaired:

(1) Linda L. Lucas, Costs of Operating Libraries in California Community Colleges (Ed.D. dissertation; San Francisco, CA: The University of San Francisco/School of Education, 1982).

(2) Alfred A. Lunardi, The Library Services and Construction Act, Title III: Public School Library Participation within Cooperative Library Networks (Ed.D. dissertation; San Francisco, CA: The University of San Francisco/School of Education, 1986).

THE UNIVERSITY OF SAN FRANCISCO

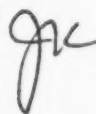
School of Education

Evaluation Memorandum No. 4:

WASC Evaluation of the School of Education Library Resources

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TO: Mr. P. E. Birkel, Dean,
Gleeson Library;

FR:  J. S. Counelis,
Professor of Education and
Coordinator of Evaluation;

DATE: October 30, 1987;

RE: Summary Notes of Meeting with Dean Birkel on October 29,
1987: Standardized Coding Procedures for the Biblio-
graphic Citation Study of Doctoral Dissertations.

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On Thursday, October 29, 1987, we had a meeting on standardized coding processes that would be uniform for the coding of the bibliographic citations found in a random sample of School of Education doctoral dissertations. In Evaluation Memorandum No. 3, the methodological premises for this study were set forth. This memorandum is a continuation of the methodological processes for this evaluation study.

Random Selection of Dissertations:

The total set of doctoral dissertations catalogued as of October 15, 1987 and shelved in Gleeson Library was 618 in number. A ten percent (10%) random sample of 62 doctoral dissertations were selected by the following processes. First, the doctoral dissertation library cards in the dissertation catalogue drawer were counted in sets of 10 cards; and every set of 100

cards was set off by a temporary tabbed card giving the inclusive sequenced numbers for each set of 100 cards. Then a random number generator [Texas Instruments Programmable 59 Computer: Program ST 02--Random Number Generator] was used to generate 62 random numbers, with the replacement of four duplicated random numbers. Thirdly, the dissertation was selected through its library card's sequentially assigned number as established in the specifically tabbed card catalogue.

These 62 dissertations have been selected. And the randomness of the sample was tested statistically in terms of the following three variables: (a) doctoral programs; (b) gender; (c) year. By calculating the confidence intervals for the proportions in the population and sample, it was found that this sample was randomized, the significance level having been set at the .01 level. Hence in terms of these variables, the sample of doctoral dissertations is representative of the whole set of 618 dissertations.

Procuring the Dissertation Bibliographies:

On 62 index cards, the following data were recorded for each doctoral dissertation that was randomly selected: (a) the numerical sequence of the generated random numbers; (b) the random number; (c) year; (d) writer's gender; (e) writer's name; (f) title of the dissertation. Using these cards, the 62 dissertations are to be drawn from the library collection. The title page and the complete bibliography are to be xeroxed. These xeroxed sheets are to be stapled in the upper right hand corner. Further, the person doing this xeroxing must be careful to xerox the complete bibliography, regardless of length in pages. Also when a dissertation has extensive appendices, the bibliography may not always be found as the very last element at the back of the dissertation.

The deck of 62 index cards is to be returned intact in the original sequenced order as noted by the number in the center of the very top line.

Standard Coding Practices for this Project:

For purposes of this university library evaluation project, the following are the standard and uniform coding practices necessary for this project. These were arrived at jointly during our meeting. All bibliographic coding is to be directly on the xeroxed sheets of each randomly selected dissertation bibliography. The LC numbers must be placed in the left margin and at the beginning of the citation.

STANDARD ONE: Each bibliographic citation in the dissertation bibliographies is to be uniformly coded with an LC number. The complete LC number must be given for each item, viz., the classifying numbers that are on both sides of the decimal point. However when the professional librarian is assigning an LC category to some bibliographic item that is not catalogued, then the librarian is to assign an LC number without the categorical details that are to the right of the decimal point.

STANDARD TWO: All bibliographic items that are in the Gleeson Library collection are to have their LC numbers coded in Green Ink.

STANDARD THREE: All bibliographic items that are not in the Gleeson Library collection are to have their LC numbers coded in Red Ink.

STANDARD FOUR: All dissertations are to be coded in a Black Ink capital letter "D." If the dissertation is in the Gleeson Library collection, the capital letter "D" is to be circled in Green Ink. If the dissertation is not in the Gleeson Library collection, then the capital letter "D" is to be circled in Red Ink. A subject category LC number is to be assigned to each dissertation.

STANDARD FIVE: All serials are to have their LC numbers written in Black Ink. Those serials that are in the Gleeson Library collection are to have their LC numbers circled in Green Ink. Those serials that are not in the Gleeson Library collection are to have LC numbers circled in Red Ink.

STANDARD SIX: All governmental publications are to be coded in Black Ink with a capital letter "G." Both LC numbers and SUDOC numbers are to be coded in Black Ink. Those governmental documents that are in the Gleeson Library collection are to have a Green Ink circle drawn around the capital letter "G." Those governmental documents that are not in the Gleeson Library collection are to have a Red Ink circle drawn around the capital letter "G."

STANDARD SEVEN: Each incomplete citation is to be coded with a Black Ink question mark (?).

STANDARD EIGHT: Whenever a chapter or essay or some titled segment of a book is explicitly cited, the source book's LC number is to be recorded. This term "book" includes anthologies, Festschriften, and reference works, like encyclopaedias, dictionaries and handbooks.

STANDARD NINE: ERIC should be used to check bibliographic sources that are published or issued by state and local governmental agencies as well as checking ERIC for cited unpublished materials. Of course, the appropriate LC numbers should be assigned to such items. Inasmuch as Gleeson Library has the entire ERIC collection, these ERIC sources should be coded in Green Ink.

STANDARD TEN: An asterisk (*) in Black Ink must be placed just prior to the LC number on each bibliographic item which a professional librarian have classified.

STANDARD ELEVEN: When there is any new problem or issue that is not covered by this memorandum, please consult Dean P. Birkel so that he can resolve the matter, given the special needs and orientation of this evaluation project.

Hopefully, I have recorded our understandings on coding this project. If I have omitted anything or erred in some way, please let me know. I will make the corrections in a succeeding memorandum.

I am very grateful to you and your staff for the coming work that is to be done on this project. I know that expertise and care will be exercised, these gifts being in abundance.

cc: Dean W. T. Garner
Associate Dean D. Messerschmitt

n.v = published but unverified, e.g. Saudi Arabian medical reports, Navy pamphlets

unp. = unpublished, e.g. letters, interviews

TABLE 3
APPLICATION OF ACRL FORMULA FOR
COLLECTION SIZE TO
GLEESON LIBRARY

Formula A

Basic Collection	85,000 volumes
Full-Time Equivalent Faculty (330 x 100 vols.)	33,000
Full-Time Equivalent Students (6,100 x 15 vols.)	91,500
Undergraduate Majors & Minors (56 x 350 vols.)	19,600
Master's with No Higher Degree Offered (24 x 6,000 vols.)	144,000
Master's with Higher Degree Offered (5 x 3,000 vols.)	15,000
Sixth-Year Specialist Degrees (0 x 25,000 vols.)	0
Doctoral Fields (5 x 25,000 vols.)	125,000
Recommended Holdings	<u>513,100</u>

Gleeson Library Holdings (June 1, 1987) .

Books	413,409
Bound Periodicals	80,761
Microfilm Reels	9,039
Microfiche Volume Equivalent	38,368
Total	<u>*541,577</u>

*Total does not include 178,081 government documents.

AMERICAN BAR ASSOCIATION
SECTION OF LEGAL EDUCATION AND ADMISSIONS TO THE BAR
FALL 1988 LAW SCHOOL ANNUAL QUESTIONNAIRE

PART III - LIBRARY

INSTRUCTIONS

Report financial figures in whole dollars and all other figures in whole numbers, except where otherwise indicated. If exact figures are not available, enter your best estimate. An asterisk (*) indicates that the definition for a term used in a requested item may be found at the end of the questionnaire.

SCHOOL NUMBER 18

Name of Law School: UNIVERSITY OF SAN FRANCISCO

Name of person to receive inquiries: VIRGINIA KELSH

Title of person to receive inquiries: LAW LIBRARIAN

Telephone number: (415)666-6678 Ext.

Return disk, one printed copy, and Dean's
Certification form by August 15, 1988, to:

James P. White
Consultant on Legal Education
American Bar Association
Indiana University
School of Law - Indianapolis
735 West New York Street
Indianapolis, IN 46202

SECTION 1 - COLLECTION

Questions 1 - 4 have been omitted for 1988.

5. Ending month of library fiscal year (number of month).	5
6. Net* Volumes* (excluding microforms) added during fiscal year.	
A. Volumes withdrawn =	330
7. Volumes* (excluding microforms) held at end of fiscal year.	105,735
8. Titles* (excluding titles of non-print items) added during fiscal year.	847
9. Titles* (excluding titles of non-print items) held at end of fiscal year.	23,586
10. Net* microform reels* added during the fiscal year.	20
A. Reels withdrawn =	0
11. Microform reels* held at end of fiscal year.	672
12. Net* microfiche* added during fiscal year.	28,759
A. Microfiche withdrawn =	0
13. Microfiche* held at end of fiscal year.	619,270
14. Units of other microform formats added during fiscal year.	0
15. Units of other microform formats held at end of fiscal year.	36,660
16. Microform titles* added during fiscal year.	2
17. Microform titles* held at end of fiscal year.	164,431
18. Other non-book titles added during the fiscal year.	1
19. Other non-book titles held at the end of fiscal year.	365
20. Number of serial subscriptions.*	2,131
21. Number of serial titles.*	1,957

GLEESON LIBRARY
UNIVERSITY OF SAN FRANCISCO
COMPUTER SEARCH SERVICE

ANNUAL REPORT

1987-1988

Patron Searches:	<u>1985-86</u>	<u>1986-87</u>	<u>1987-88</u>
Faculty	<u>96</u>	<u>94</u>	<u>68</u>
Graduate Student	<u>327</u>	<u>555</u>	<u>501</u>
Undergraduate	<u>247</u>	<u>392</u>	<u>432</u>
Other	<u>14</u>	<u>10</u>	<u>16</u>
TOTAL	<u>684</u>	<u>1051</u>	<u>1017</u>
Reference Department Searches	<u>513</u>	<u>247</u>	<u>206</u>
TOTAL	<u>1197</u>	<u>1298</u>	<u>1223</u>
Amount Paid by Patrons for Searches	<u>\$11,598.43</u>	<u>\$10,391.50</u>	<u>\$10,599.61</u>
Surcharge	<u>N/A</u>	<u>\$1,344.04</u>	<u>\$3,200.31</u>

Searches by Department:	<u>1985-86</u>	<u>1986-87</u>	<u>1987-88</u>
Arts and Humanities	<u>5</u>	<u>10</u>	<u>24</u>
Business	<u>51</u>	<u>72</u>	<u>33</u>
Education	<u>232</u>	<u>280</u>	<u>368</u>
Nursing	<u>139</u>	<u>143</u>	<u>95</u>
Professional Studies	<u>180</u>	<u>362</u>	<u>510</u>
Psychology	<u>1</u>	<u>1</u>	<u>N/A</u>
Science	<u>55</u>	<u>48</u>	<u>33</u>
Other	<u>21</u>	<u>35</u>	<u>19</u>

INTERLIBRARY LOAN SERVICE
ANNUAL REPORT
1987-1988

BORROWING	1983-84	1984-85	1985-86	1986-87	1987-88
Items Received	727	660	579	517	475
Photocopies	253	405	297	426	341
TOTAL	980	1065	876	943	816
Unfilled Requests	60	170	163	156	135
OCLC Requests Initiated	556	819	863	935	814
LENDING					
Items Loaned	571	670	719	589	577
Photocopies	65	103	89	144	147
TOTAL	636	773	808	733	724
Unfilled Requests	1301	1478	843	600	949
Payments Received	N/A	N/A	N/A	\$200.01	\$524.92

TABLE NO. 1: The Comparison of Population and
Sample by Gender:

A Confidence Interval Test of Proportions

Gender	Population	Sample
Males	286 (46.3%)	28 (45.2%)
Females	332 (53.7%)	34 (54.8%)
Total	618 (100.0%)	62 (100.0%)

The Confidence Interval Test for Proportions

Males:	$.197 < p_1 - p_2 < -.253$	$(\alpha = .01)$	Not Significant
Females:	$.231 < p_1 - p_2 < -.233$	$(\alpha = .01)$	Not Significant

Table 2

TABLE NO. 2: The Comparison of Proportions for
Population and Sample of Dissertations by Program:
A Confidence Interval Test of Proportions

Programs	Population	Sample
Curriculum & Instruction	129 (20.9%)	10 (16.1%)
Educational Psychology & Counseling	155 (25.1%)	15 (24.2%)
Multicultural Education	84 (13.6%)	10 (16.1%)
Organization & Leadership	238 (38.5%)	24 (37.1%)
Private School Administration	12 (1.9%)	3 (6.5%)
Total	618 (100.0%)	62 (100.0%)

Table 2

The Confidence Interval Test for Proportions

C/I:	$.289 < p_1 - p_2 < -.277$	$(\alpha = .01)$	Not Significant
EP/C:	$.270 < p_1 - p_2 < -.268$	$(\alpha = .01)$	Not Significant
ME:	$.281 < p_1 - p_2 < -.287$	$(\alpha = .01)$	Not Significant
O/L:	$.242 < p_1 - p_2 < -.239$	$(\alpha = .01)$	Not Significant
PSA:	$.358 < p_1 - p_2 < -.372$	$(\alpha = .01)$	Not Significant

Table 3

TABLE NO. 3: The Comparison of Proportions for
Population and Sample of Disserations by Years:
A Confidence Interval Test of Proportions

Years	Population	Sample
1977	4 (--.6%)	--- ---
1978	15 (2.5%)	1 (1.6%)
1979	43 (7.0%)	2 (3.2%)
1980	61 (9.9%)	3 (4.8%)
1981	83 (13.4%)	13 (21.0%)
1982	89 (14.4%)	9 (14.5%)
1983	84 (13.6%)	6 (9.7%)
1984	76 (12.4%)	10 (16.2%)
1985	75 (12.2%)	11 (17.7%)
1986	81 (13.2%)	7 (11.3%)
1987	7 (1.8%)	--- ---
TOTAL	618 (100.0%)	62 (100.0%)

Table 3

The Confidence Interval Test for Proportions

1978:	$.132 < p_1 - p_2 < -.131$	$(\alpha = .01)$	Not Significant
1979:	$.130 < p_1 - p_2 < -.125$	$(\alpha = .01)$	Not Significant
1980:	$.130 < p_1 - p_2 < -.125$	$(\alpha = .01)$	Not Significant
1981:	$.268 < p_1 - p_2 < -.301$	$(\alpha = .01)$	Not Significant
1982:	$.287 < p_1 - p_2 < -.287$	$(\alpha = .01)$	Not Significant
1983:	$.294 < p_1 - p_2 < -.289$	$(\alpha = .01)$	Not Significant
1984:	$.280 < p_1 - p_2 < -.290$	$(\alpha = .01)$	Not Significant
1985:	$.274 < p_1 - p_2 < -.288$	$(\alpha = .01)$	Not Significant
1986:	$.294 < p_1 - p_2 < -.353$	$(\alpha = .01)$	Not Significant

Table 4

TABLE NO. 4: The Comparison of Proportions for
Population and Sample of Dissertations
by Males and Programs:
A Confidence Interval Test of Proportions

Programs	Population	Sample
Curriculum & Instruction	47 (16.4%)	4 (13.8%)
Educational Psychology & Counseling	69 (24.1%)	6 (20.7%)
Multicultural Education	35 (12.3%)	6 (20.7%)
Organization & Leadership	125 (43.7%)	11 (37.9%)
Private School Administration	10 (3.5%)	2 (6.9%)
Total	286 (100.0%)	29 (100.0%)

Table 4

The Confidence Interval Test for Proportions

C/I:	$.425 < p_1 - p_2 < -.415$	$(\alpha = .01)$	Not Significant
EP/C:	$.409 < p_1 - p_2 < -.398$	$(\alpha = .01)$	Not Significant
ME:	$.391 < p_1 - p_2 < -.421$	$(\alpha = .01)$	Not Significant
O/L:	$.365 < p_1 - p_2 < -.347$	$(\alpha = .01)$	Not Significant
PSA:	$.432 < p_1 - p_2 < -.445$	$(\alpha = .01)$	Not Significant

Table 5

TABLE NO 5: The Comparison of Proportions for
Population and Sample of Dissertations
by Females and Programs:
A Confidence Interval Test of Proportions

Programs	Population	Sample
Curriculum & Instruction	82 (24.3%)	6 (18.2%)
Educational Psychology & Counseling	86 (25.9%)	9 (27.3%)
Multicultural Education	49 (14.8%)	4 (12.1%)
Organization & Leadership	113 (34.0%)	13 (39.0%)
Private School Administration	2 (--.6%)	1 (3.0%)
Total	332 (100.0%)	33 (100.0%)

Table 5

The Confidence Interval Test for Proportions

C/I:	$.394 < p_1 - p_2 < -.372$	$(\alpha = .01)$	Not Significant
EP/C:	$.361 < p_1 - p_2 < -.366$	$(\alpha = .01)$	Not Significant
ME:	$.402 < p_1 - p_2 < -.393$	$(\alpha = .01)$	Not Significant
O/L:	$.324 < p_1 - p_2 < -.340$	$(\alpha = .01)$	Not Significant
PSA:	$.413 < p_1 - p_2 < -.421$	$(\alpha = .01)$	Not Significant

Table 6

TABLE NO. 6: The Comparison of Proportions for
Population and Sample of Dissertations by Author's Last Name
and Its First Initial:

A Confidence Interval Test of Proportions

Last Name Initial	Population	Sample
A	30 (4.85%)	4 (6.45%)
B	58 (9.39%)	7 (11.30%)
C	46 (7.44%)	3 (4.84%)
D	39 (6.31%)	1 (1.61%)
E	14 (2.27%)	3 (4.84%)
F	18 (2.91%)	3 (4.84%)
G	26 (4.21%)	1 (1.61%)
H	42 (6.80%)	7 (11.30%)
I	6 (-.97%)	1 (1.61%)
J	17 (2.75%)	1 (1.61%)
K	27 (4.37%)	6 (9.68%)
L	31 (5.02%)	2 (3.23%)
M	51 (8.25%)	4 (6.45%)
N	9 (1.46%)	1 (1.61%)
O	17 (2.75%)	1 (1.61%)
P	26 (4.21%)	4 (6.45%)
Q	----	----
R	25 (4.06%)	3 (4.84%)
S	62 (10.03%)	5 (8.06%)
T	17 (2.75%)	----
U	2 (-.32%)	----
V	7 (1.13%)	----
W	43 (6.96%)	4 (6.45%)
X	----	----
Y	4 (-.65%)	----
Z	1 (-.14%)	1 (1.61%)
Total	618 (100.0%)	62 (100.0%)

The Confidence Interval Test for Proportions

A:	$.333 < p_1 - p_2 < -.334$	$(\alpha = .01)$	Not Significant
B:	$.442 < p_1 - p_2 < -.449$	$(\alpha = .01)$	Not Significant
C:	$.454 < p_1 - p_2 < -.445$	$(\alpha = .01)$	Not Significant
D:	$.146 < p_1 - p_2 < -.141$	$(\alpha = .01)$	Not Significant
E:	$.450 < p_1 - p_2 < -.463$	$(\alpha = .01)$	Not Significant
F:	$.333 < p_1 - p_2 < -.334$	$(\alpha = .01)$	Not Significant
G:	$.147 < p_1 - p_2 < -.144$	$(\alpha = .01)$	Not Significant
H:	$.318 < p_1 - p_2 < -.330$	$(\alpha = .01)$	Not Significant
I:	$.145 < p_1 - p_2 < -.146$	$(\alpha = .01)$	Not Significant
J:	$.146 < p_1 - p_2 < -.145$	$(\alpha = .01)$	Not Significant
K:	$.323 < p_1 - p_2 < -.335$	$(\alpha = .01)$	Not Significant
L:	$.398 < p_1 - p_2 < -.393$	$(\alpha = .01)$	Not Significant
M:	$.302 < p_1 - p_2 < -.298$	$(\alpha = .01)$	Not Significant
N:	$.146 < p_1 - p_2 < -.146$	$(\alpha = .01)$	Not Significant
O:	$.146 < p_1 - p_2 < -.145$	$(\alpha = .01)$	Not Significant
P:	$.330 < p_1 - p_2 < -.336$	$(\alpha = .01)$	Not Significant

Table 6

R:	$.335 < p_1 - p_2 < -.370$	$(\alpha = .01)$	Not Significant
S:	$.142 < p_1 - p_2 < -.140$	$(\alpha = .01)$	Not Significant
W:	$.332 < p_1 - p_2 < -.331$	$(\alpha = .01)$	Not Significant
Z:	$.140 < p_1 - p_2 < -.142$	$(\alpha = .01)$	Not Significant

Table 7

TABLE NO. 7: The Comparison of Proportions of Duplicate
and Non-Duplicate Verified Within-Collection Citations,
for the Total Sample, Programs and Dissertations:
A Confidence Interval Test of Proportions

Measurement Level	Duplicate Citations	Non-Duplicate Citations
<u>Total Sample</u> : n = 62	3,374 (69.4%)	2,607 (68.0%)
<u>Programs</u> :		
Curriculum & Instruction: n = 10	654 (76.9%)	456 (76.3%)
Educational Psychology & Counseling: n = 15	845 (72.7%)	626 (71.8%)
Multicultural Education: n = 10	570 (63.0%)	436 (61.2%)
Organization & Leadership: n = 24	1,195 (66.9%)	993 (65.7%)
Private School Administration: n = 3	110 (69.6%)	96 (69.1%)
<u>Dissertations</u> :		
Curriculum & Instruction		
Case 01: Bush, J. D.	147 (81.1%)	74 (83.1%)
Case 02: Eaton, S. L.	50 (76.9%)	43 (74.1%)
Case 03: Edelstein, R.	55 (63.2%)	39 (72.2%)

Table 7

Case 04: Hewitt, J.	58 (80.6%)	49 (84.5%)
Case 05: Huntley, O. M.	41 (53.2%)	36 (58.1%)
Case 06: Irwin, T. H.	83 (87.4%)	49 (92.5%)
Case 07: Kelly, H. D.	82 (78.1%)	63 (76.8%)
Case 08: Nichols, J. D.	35 (67.3%)	31 (66.0%)
Case 09: Person, C. H.	46 (93.9%)	32 (91.4%)
Case 10: Smith, B. H.	57 (67.9%)	40 (66.7%)

Educational Psychology & Counseling

Case 11: Amis, D. K.	104 (83.9%)	62 (78.5%)
Case 12: Bass, B.	68 (82.9%)	54 (80.6%)
Case 13: Borba, C. E.	54 (94.7%)	41 (93.2%)
Case 14: Campbell, R. S.	37 (77.1%)	36 (76.6%)
Case 15: Coker, R. L.	28 (56.0%)	25 (58.1%)
Case 16: Costello, C. M.	72 (72.0%)	60 (69.0%)
Case 17: Evers, J.	34 (52.3%)	29 (67.4%)
Case 18: Fretter, P. B.	44 (62.0%)	34 (65.4%)

Table 7

Case 19: Guzicki, J. A.	74 (70.5%)	60 (69.0%)
Case 20: Knable, P. A.	67 (76.1%)	43 (74.1%)
Case 21: Koscior, M. L.	23 (65.7%)	22 (64.7%)
Case 22: Laurenza, S. A.	47 (53.4%)	38 (62.3%)
Case 23: Sanderson, D. R.	88 (77.9%)	46 (68.7%)
Case 24: Smith, V. S.	47 (66.2%)	27 (58.7%)
Case 25: Williams, M. L.	58 (87.9%)	49 (86.0%)

Multicultural Education

Case 26: Al-Mouhandis, Z.	16 (57.1%)	15 (60.0%)
Case 27: Artiga, A.	35 (67.3%)	26 (63.4%)
Case 28: Heathcote, O.	42 (56.0%)	41 (57.7%)
Case 29: Hsu, G. L-T.	43 (78.2%)	38 (76.0%)
Case 30: Kirk, M. C.	88 (69.3%)	79 (66.9%)
Case 31: Page, C. M.	27 (77.1%)	27 (77.1%)
Case 32: Rios-C, H.	165 (66.3%)	69 (63.9%)
Case 33: Song, Z.	43 (44.8%)	36 (40.9%)

Table 7

Case 34: Wood, S. V.	78 (61.2%)	72 (61.5%)
Case 35: Zacarias, R.	33 (53.2%)	33 (53.2%)

Organization & Leadership

Case 36: Atwood, A. H.	83 (76.9%)	58 (70.7%)
Case 37: Boyd, G.	52 (80.0%)	52 (80.0%)
Case 38: Brophy, D. A.	56 (74.7%)	50 (72.5%)
Case 39: De Lucca, C. E.	64 (45.1%)	61 (58.1%)
Case 40: Fletcher, D. K.	46 (67.6%)	44 (67.7%)
Case 41: Foley, R. P.	40 (56.3%)	27 (46.6%)
Case 42: Harper, V. L.	48 (75.0%)	48 (75.0%)
Case 43: Hildebrand, M. A.	37 (82.2%)	36 (81.8%)
Case 44: Hoffman, R. A.	70 (74.5%)	57 (72.2%)
Case 45: King, R. I.	64 (74.4%)	47 (75.8%)
Case 46: Kisbey, B. R.	22 (64.7%)	16 (57.1%)
Case 47: Lynch, P.	38 (79.2%)	34 (72.3%)
Case 48: McLain, B. R.	92 (68.7%)	60 (64.5%)

Table 7

Case 49: Martin, P. H.	35 (36.1%)	30 (33.0%)
Case 50: Mattis, A. E.	26 (44.8%)	23 (44.2%)
Case 51: Moore, C. E.	49 (87.5%)	49 (87.5%)
Case 52: Ogbuehi, D. A.	59 (70.2%)	54 (69.2%)
Case 53: Perez, R. R.	32 (71.1%)	32 (71.1%)
Case 54: Perriera, F. L.	23 (63.9%)	21 (70.0%)
Case 55: Radcliffe, D. J.	42 (71.2%)	29 (63.0%)
Case 56: Ristau, K. M.	37 (69.8%)	37 (71.2%)
Case 57: Schwartz, V. H.	28 (68.3%)	25 (69.4%)
Case 58: Walker, J. D.	114 (76.5%)	64 (67.4%)
Case 59: Weigand, J. M.	39 (52.0%)	39 (52.0%)

Private School Administration

Case 60: Bartlett, D. A.	22 (78.6%)	22 (78.6%)
Case 61: Buckley, M. L.	56 (65.1%)	47 (65.3%)
Case 62: John, R. L.	32 (72.7%)	27 (69.2%)

Table 7

The Confidence Interval Test of Proportions

<u>Total</u>			
<u>Sample:</u>	$.044 < p_1 - p_2 < -.043$	$(\alpha = .001)$	Not Significant

Programs:

C & I:	$.082 < p_1 - p_2 < -.082$	$(\alpha = .001)$	Not Significant
EP & C:	$.069 < p_1 - p_2 < -.069$	$(\alpha = .001)$	Not Significant
ME:	$.093 < p_1 - p_2 < -.092$	$(\alpha = .001)$	Not Significant
O & L:	$.062 < p_1 - p_2 < -.061$	$(\alpha = .001)$	Not Significant
PSA:	$.198 < p_1 - p_2 < -.197$	$(\alpha = .001)$	Not Significant

Dissertations:

Curriculum & Instruction

Case 01:	$.165 < p_1 - p_2 < -.167$	$(\alpha = .001)$	Not Significant
Case 02:	$.281 < p_1 - p_2 < -.276$	$(\alpha = .001)$	Not Significant
Case 03:	$.289 < p_1 - p_2 < -.307$	$(\alpha = .001)$	Not Significant
Case 04:	$.224 < p_1 - p_2 < -.230$	$(\alpha = .001)$	Not Significant

Table 7

Case 05:	$.345 < p_1 - p_2 < -.357$	$(\alpha = .001)$	Not Significant
Case 06:	$.158 < p_1 - p_2 < -.163$	$(\alpha = .001)$	Not Significant
Case 07:	$.217 < p_1 - p_2 < -.215$	$(\alpha = .001)$	Not Significant
Case 08:	$.361 < p_1 - p_2 < -.358$	$(\alpha = .001)$	Not Significant
Case 09:	$.189 < p_1 - p_2 < -.186$	$(\alpha = .001)$	Not Significant
Case 10:	$.227 < p_1 - p_2 < -.224$	$(\alpha = .001)$	Not Significant

Educational Psychology & Counseling

Case 11:	$.199 < p_1 - p_2 < -.192$	$(\alpha = .001)$	Not Significant
Case 12:	$.222 < p_1 - p_2 < -.219$	$(\alpha = .001)$	Not Significant
Case 13:	$.152 < p_1 - p_2 < -.151$	$(\alpha = .001)$	Not Significant
Case 14:	$.306 < p_1 - p_2 < -.305$	$(\alpha = .001)$	Not Significant
Case 15:	$.417 < p_1 - p_2 < -.423$	$(\alpha = .001)$	Not Significant

Table 7

Case 16:	$.250 < p_1 - p_2 < -.245$	$(\alpha = .001)$	Not Significant
Case 17:	$.363 < p_1 - p_2 < -.392$	$(\alpha = .001)$	Not Significant
Case 18:	$.336 < p_1 - p_2 < -.344$	$(\alpha = .001)$	Not Significant
Case 19:	$.248 < p_1 - p_2 < -.246$	$(\alpha = .001)$	Not Significant
Case 20:	$.264 < p_1 - p_2 < -.261$	$(\alpha = .001)$	Not Significant
Case 21:	$.441 < p_1 - p_2 < -.438$	$(\alpha = .001)$	Not Significant
Case 22:	$.322 < p_1 - p_2 < -.341$	$(\alpha = .001)$	Not Significant
Case 23:	$.261 < p_1 - p_2 < -.246$	$(\alpha = .001)$	Not Significant
Case 24:	$.372 < p_1 - p_2 < -.354$	$(\alpha = .001)$	Not Significant
Case 25:	$.204 < p_1 - p_2 < -.201$	$(\alpha = .001)$	Not Significant

Multicultural Education

Case 26:	$.541 < p_1 - p_2 < -.552$	$(\alpha = .001)$	Not Significant
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Table 7

Case 27:	$.386 < p_1 - p_2 < -.376$	$(\alpha = .001)$	Not Significant
Case 28:	$.335 < p_1 - p_2 < -.339$	$(\alpha = .001)$	Not Significant
Case 29:	$.292 < p_1 - p_2 < -.288$	$(\alpha = .001)$	Not Significant
Case 30:	$.225 < p_1 - p_2 < -.221$	$(\alpha = .001)$	Not Significant
Case 31:	Non-Duplicate Citations = Duplicate Citations.		
Case 32:	$.229 < p_1 - p_2 < -.225$	$(\alpha = .001)$	Not Significant
Case 33:	$.350 < p_1 - p_2 < -.341$	$(\alpha = .001)$	Not Significant
Case 34:	$.245 < p_1 - p_2 < -.246$	$(\alpha = .001)$	Not Significant
Case 35:	Non-Duplicate Citations = Duplicate Citations.		

Organization & Leadership

Case 36:	$.238 < p_1 - p_2 < -.229$	$(\alpha = .001)$	Not Significant
Case 37:	Non-Duplicate Citations = Duplicate Citations.		
Case 38:	$.268 < p_1 - p_2 < -.264$	$(\alpha = .001)$	Not Significant

Table 7

Case 39:	$.262 < p_1 - p_2 < -.286$	$(\alpha = .001)$	Not Significant
Case 40:	$.306 < p_1 - p_2 < -.306$	$(\alpha = .001)$	Not Significant
Case 41:	$.394 < p_1 - p_2 < -.370$	$(\alpha = .001)$	Not Significant
Case 42:	Non-Duplicate Citations = Duplicate Citations.		
Case 43:	$.278 < p_1 - p_2 < -.278$	$(\alpha = .001)$	Not Significant
Case 44:	$.245 < p_1 - p_2 < -.237$	$(\alpha = .001)$	Not Significant
Case 45:	$.256 < p_1 - p_2 < -.258$	$(\alpha = .001)$	Not Significant
Case 46:	$.508 < p_1 - p_2 < -.491$	$(\alpha = .001)$	Not Significant
Case 47:	$.322 < p_1 - p_2 < -.308$	$(\alpha = .001)$	Not Significant
Case 48:	$.245 < p_1 - p_2 < -.238$	$(\alpha = .001)$	Not Significant
Case 49:	$.369 < p_1 - p_2 < -.362$	$(\alpha = .001)$	Not Significant
Case 50:	$.440 < p_1 - p_2 < -.438$	$(\alpha = .001)$	Not Significant
Case 51:	Non-Duplicate Citations = Duplicate Citations.		

Table 7

Case 52:	$.267 < p_1 - p_2 < -.265$	$(\alpha = .001)$	Not Significant
Case 53:	$.341 < p_1 - p_2 < -.348$	$(\alpha = .001)$	Not Significant
Case 54:	$.428 < p_1 p_2 < -.446$	$(\alpha = .001)$	Not Significant
Case 55:	$.360 < p_1 - p_2 < -.342$	$(\alpha = .001)$	Not Significant
Case 56:	$.325 < p_1 - p_2 < -.328$	$(\alpha = .001)$	Not Significant
Case 57:	$.295 < p_1 - p_2 < -.298$	$(\alpha = .001)$	Not Significant
Case 59:	Non-Duplicate Citations = Duplicate Citations.		

Private School Administraion

Case 60:	Non-Duplicate Citations = Duplicate Citations.		
Case 61:	$.291 < p_1 - p_2 < -.291$	$(\alpha = .001)$	Not Significant
Case 62:	$.371 < p_1 - p_2 < -.363$	$(\alpha = .001)$	Not Significant

Table 8

TABLE NO. 8: Dissertation Sample Citations Statistics,
 Total and by Program:
 Descriptive Statistics

The Total Sample Set of Dissertations: n = 62

Variable	N	Sum	Mean	Standard Deviation
TOTALCIT	62	5308.000	85.613	38.749
CITA1	62	3374.000	54.419	28.447
CITA2	62	1489.000	24.016	16.048
CITA3	55	271.000	4.927	5.088
CITA4	41	174.000	4.244	3.513
NDTOTCIT	62	4277.000	68.984	24.119
NDCITA1	62	2607.000	42.048	15.093
NDCITA2	62	1226.000	19.774	11.913
INCOLPCT	62	4305.800	69.448	12.336

	Minimum	Maximum	Range
	30.000	258.000	228.000
	16.000	165.000	149.000
	3.000	84.000	81.000
	1.000	22.000	21.000
	1.000	14.000	13.000
	30.000	140.000	110.000
	15.000	79.000	64.000
	3.000	61.000	58.000
	36.100	94.700	58.600

Table 8

The Sample Set of Dissertations: Curriculum and Instruction

n = 10

Variable	N	Sum	Mean	Standard Deviation
TOTALCIT	10	895.000	89.500	34.955
CITA1	10	654.000	65.400	32.678
CITA2	10	197.000	19.700	9.911
CITA3	9	18.000	2.000	1.000
CITA4	7	26.000	3.714	3.094
NDTOTCIT	10	642.000	64.200	17.441
NDCITA1	10	456.000	45.600	13.761
NDCITA2	10	142.000	14.200	7.131
INCOLPCT	10	749.600	74.960	12.096

	Minimum	Maximum	Range
	51.000	176.000	125.000
	35.000	147.000	112.000
	3.000	36.000	33.000
	1.000	4.000	3.000
	1.000	9.000	8.000
	37.000	100.000	63.000
	31.000	74.000	43.000
	3.000	26.000	23.000
	53.200	93.900	40.700

Table 8

The Sample Set of Dissertations: Educational Psychology
and Counseling: n = 15

Variable	N	Sum	Mean	Standard Deviation
TOTALCIT	15	1223.000	81.533	26.390
CITA1	15	845.000	56.333	22.683
CITA2	15	318.000	21.200	10.122
CITA3	12	31.000	2.583	1.730
CITA4	9	29.000	3.222	4.177
NDTOTCIT	15	932.000	62.133	18.601
NDCITA1	15	626.000	41.733	13.247
NDCITA2	15	246.000	16.400	6.653
INCOLPCT	15	1078.600	71.907	12.738

	Minimum	Maximum	Range
	37.000	126.000	89.000
	23.000	104.000	81.000
	3.000	41.000	38.000
	1.000	6.000	5.000
	1.000	14.000	13.000
	36.000	103.000	67.000
	22.000	62.000	40.000
	3.000	27.000	24.000
	52.300	94.700	42.400

Table 8

The Sample Set of Dissertations: Multicultural Education:

n = 10

Variable	N	Sum	Mean	Standard Deviation
TOTALCIT	10	1015.000	101.500	65.296
CITA1	10	570.000	57.000	43.874
CITA2	10	335.000	33.500	23.661
CITA3	9	78.000	8.667	6.481
CITA4	8	32.000	4.000	4.504
NDTOTCIT	10	822.000	82.200	35.396
NDCITA1	10	436.000	43.600	21.900
NDCITA2	10	276.000	27.600	15.855
INCOLPCT	10	630.500	63.050	10.610

	Minimum	Maximum	Range
	44.000	258.000	214.000
	16.000	165.000	149.000
	8.000	84.000	76.000
	1.000	22.000	21.000
	1.000	13.000	12.000
	44.000	140.000	96.000
	15.000	79.000	64.000
	8.000	52.000	44.000
	44.800	78.200	33.400

Table 8

The Sample of Dissertations: Organization and Leadership:

n = 24

Variable	N	Sum	Mean	Standard Deviation
TOTALCIT	24	2008.000	83.667	32.980
CITA1	24	1195.000	49.792	22.677
CITA2	24	591.000	24.625	16.983
CITA3	23	138.000	6.000	5.705
CITA4	15	84.000	5.600	2.667
NDTOTCIT	24	1733.000	72.208	22.390
NDCITA1	24	993.000	41.375	14.145
NDCITA2	24	519.000	21.625	12.961
INCOLPCT	24	1630.700	67.946	12.699

	Minimum	Maximum	Range
	44.000	157.000	113.000
	21.000	114.000	93.000
	7.000	78.000	71.000
	1.000	20.000	19.000
	2.000	11.000	9.000
	38.000	114.000	76.000
	16.000	64.000	48.000
	7.000	61.000	54.000
	36.100	87.500	51.400

Table 8

The Sample Dissertations: Private School Administration:

n = 3

Variable	N	Sum	Mean	Standard Deviation
TOTALCIT	3	167.000	55.667	29.569
CITA1	3	110.000	36.667	17.474
CITA2	3	48.000	16.000	12.490
CITA3	2	6.000	3.000	1.414
CITA4	2	3.000	1.500	0.707
NDTOTCIT	3	148.000	49.333	22.480
NDCITA1	3	96.000	32.000	13.229
NDCITA2	3	43.000	14.333	9.713
INCOLPCT	3	216.400	72.133	6.768

	Minimum	Maximum	Range
	30.000	88.000	58.000
	22.000	56.000	34.000
	6.000	30.000	24.000
	2.000	4.000	2.000
	1.000	2.000	1.000
	30.000	74.000	44.000
	22.000	47.000	25.000
	6.000	25.000	19.000
	65.100	78.600	13.500

Table 9

TABLE NO. 9: Library of Congress Subject Category Inventory
of Citations, by Doctoral Program and Citation Status in
Gleeson and Kendrick Libraries

LC Category	C/I		EP/C		ME		O/L		PSA	
	I	O	I	O	I	O	I	O	I	O
A:	-	-	*	*	*	*	*	*	*	-
B-BD; BH-BJ:	*	*	*	-	*	*	*	*	-	-
BF:	*	*	*	*	*	*	*	*	*	*
BL-BX:	*	*	*	*	*	*	*	*	*	-
C:	-	-	-	-	*	-	*	*	-	-
D:	-	-	-	-	*	-	*	-	*	-
E:	*	*	-	-	*	*	*	*	-	-
F:	-	-	-	-	*	*	*	-	-	-
G:	*	-	*	-	*	*	*	*	-	-
H:	*	*	*	*	*	*	*	*	*	*
J:	-	-	*	-	*	*	*	*	-	-
K:	*	*	*	-	*	*	*	*	-	-
L:	*	*	*	*	*	*	*	*	*	*
M:	-	-	-	-	*	-	-	-	-	-
N:	-	-	-	-	*	*	*	*	-	-
P:	*	*	*	-	*	*	*	*	-	-
Q:	*	*	*	*	*	*	*	*	*	-
R:	*	*	*	*	*	*	*	*	*	-
S:	-	-	-	-	-	-	-	-	-	-
T:	*	*	*	-	-	-	*	*	*	-
U:	-	-	-	-	-	-	-	-	-	-
V:	-	-	-	-	-	-	-	-	-	-
Z:	*	*	*	-	*	*	*	-	-	-
In Collection:	13/23		14/23		20/23		19/23		9/23	
Not In Collection:	12/23		7/23		16/23		16/23		3/23	

Table 9

Programs: Curriculum & Instruction:	In Collection: 56.6%
	Not in Collection: 52.2%
Educational Psychology & Counseling:	In Collection: 60.9%
	Not in Collection: 30.4%
Multicultural Education:	In Collection: 87.0%
	Not in Collection: 69.6%
Organization & Leadership:	In Collection: 82.6%
	Not In Collection: 69.6%
Private School Administration:	In Collection: 39.1%
	Not in Collection: 13.0%

Library of Congress Subject Categories

A:	General Works
B-BD; BH-BJ:	Philosophy
BF:	Psychology
BL-BX:	Religion
C:	Auxiliary Sciences of History
D:	History
E:	History
F:	History
G:	Geography, Anthropology and Maps
H:	Social Sciences
J:	Political Science
K:	Law
L:	Education
M:	Music
N:	Fine Arts
P:	Linguistics, Philology, Languages & Literature
Q:	Science
R:	Medicine
S:	Agriculture
T:	Technology
U:	Military Science
V:	Naval Science
Z:	Bibliography & Library Science

Table 10

TABLE NO. 10: Mean Percent of Within-Collection Citations,
 Doctoral Programs and Gender: Seven T-Tests

T-Test 1:

Group 1 is PROGRAM = C-I
 Group 2 is PROGRAM = EP-C

Dependent Variable	Group 1	Group 2	Separate Variances		Pooled Variances
INCOLPCT					
N	10	15	T	0.61	0.60
Mean	74.960	71.907	DF	20.15	23
S.D.	12.096	12.738	P	0.5517	0.5552

T-Test 2:

Group 1 is PROGRAM = C-I
 Group 2 is PROGRAM = ME

Dependent Variable	Group 1	Group 2	Separate Variances		Pooled Variances
INCOLPCT					
N	10	10	T	2.34	2.34
Mean	74.960	63.050	DF	17.70	18
S.D.	12.096	10.610	P	0.0312	0.0310

Table.10

T-Test 3:

Group 1 is PROGRAM = C-I

Group 2 is PROGRAM = O-L

Dependent Variable	Group 1	Group 2	Separate Variances		Pooled Variances
INCOLPCT					
N	10	24	T	1.52	1.49
Mean	74.960	67.946	DF	17.70	32
S.D.	12.096	12.699	P	0.1467	0.1468

T-Test 4:

Group 1 is PROGRAM = EP-C

Group 2 is PROGRAM = ME

Dependent Variable	Group 1	Group 2	Separate Variances		Pooled Variances
INCOLPCT					
N	15	10	T	1.89	1.82
Mean	71.907	63.050	DF	21.72	23
S.D.	12.738	10.610	P	0.0729	0.0826

T-Test 5:

Group 1 is PROGRAM = EP-C

Group 2 is PROGRAM = O-L

Dependent Variable	Group 1	Group 2	Separate Variances		Pooled Variances
INCOLPCT					
N	15	24	T	0.95	0.95
Mean	71.907	67.946	DF	29.80	37
S.D.	12.738	12.699	P	0.3518	0.3500

Table 10

T-Test 6:

Group 1 is PROGRAM = ME
Group 2 is PROGRAM = O-L

Dependent Variable	Group 1	Group 2		Separate Variances	Pooled Variances
INCOLPCT					
N	10	24	T	-1.15	-1.07
Mean	63.050	67.946	DF	20.14	32
S.D.	10.610	12.699	P	0.2617	0.2923

T-Test 7:

Group 1 is GENDER = male
Group 2 is GENDER = female

Dependent Variable	Group 1	Group 2		Separate Variances	Pooled Variances
INCOLPCT					
N	28	34	T	0.63	0.62
Mean	70.532	68.556	DF	59.07	60
S.D.	11.899	12.792	P	0.5317	0.5346

F test of equal variances rejected at $\alpha = .05$

Table 11

TABLE NO. 11: Dissertation Sample Citations Statistics,
Total, by Program and by Citation Status in
Gleeson and Kendrick Libraries

The Total Sample Set of Dissertations: n = 62

PROGRAM	IN		OUT		TOTAL	
	n	%	n	%	n	%
C/I:	654	76.9	197	23.1	851	100.0
EP/C	845	72.7	318	27.3	1163	100.0
ME:	570	63.0	335	37.0	905	100.0
O/L:	1195	66.9	591	33.1	1786	100.0
PSA:	110	69.6	48	30.4	158	100.0
Total:	3374	69.4	1489	30.6	4863	100.0

Table 11

Education Citations						
PROGRAM	IN		OUT		TOTAL	
	n	%	n	%	n	%
C/I:	215	74.7	73	25.3	288	100.0
EP/C:	150	76.9	45	23.1	195	100.0
ME:	206	62.8	122	37.2	328	100.0
O/L:	337	62.1	206	37.9	543	100.0
PSA:	46	67.6	22	32.4	68	100.0
Total:	954	67.1	468	32.9	1422	100.0

Table 11

Non-Education Citations

PROGRAM	IN		OUT		TOTAL	
	n	%	n	%	n	%
C/I:	439	78.0	124	22.0	653	100.0
EP/C:	695	71.8	273	28.2	968	100.0
ME:	364	63.1	213	36.9	577	100.0
O/L:	858	69.0	385	31.0	1243	100.0
PSA:	64	71.1	26	28.9	90	100.0
Total:	2420	70.3	1021	29.7	3441	100.0

Table 12

TABLE NO. 12: Library of Congress Education [L]
 Category Inventory of Citations, by Doctoral Programs
 and Citation Status in Gleeson and Kendrick Libraries

LC Category	C/I		EP/C		ME		O/L		PSA	
	I	O	I	O	I	O	I	O	I	O
L:	*	*	*	*	*	*	*	*	*	*
LA:	*	*	*	*	*	*	*	*	*	*
LB:	*	*	*	*	*	*	*	*	*	*
LC:	*	*	*	*	*	*	*	*	*	*
LD:	*	*	*	-	*	*	*	*	*	*
LE:	-	-	-	-	-	-	-	-	-	-
LF:	-	-	-	-	-	-	-	-	-	-
LG:	-	-	-	-	-	-	-	-	-	-
LH:	-	-	-	-	-	-	*	-	-	-
LJ:	*	-	*	-	*	-	*	-	-	-
LT:	-	-	-	-	-	-	-	-	-	-
In Collection:	6/8		6/8		6/8		7/8		5/8	
Not In Collection:	5/8		4/8		5/8		5/8		4/8	

Programs: Curriculum & Instruction: In Collection: 75.0%
 Not In Collection: 62.5

Educational Psychology &
 Counseling: In Collection: 75.0%
 Not In Collection: 50.0%

Table 12

Multicultural Education:	In Collection: 75.0%
	Not In Collection: 62.5%
Organization & Leadership:	In Collection: 87.5%
	Not In Collection: 62.5%
Private School Administration:	In Collection: 62.5%
	Not in Collection: 50.0%

Library of Congress Education Categories

L:	Education (General)
LA:	History of Education
LB:	Theory and Practice of Education
LC:	Special Aspects of Education
LD:	Individual Institutions: universities, colleges and schools in the United States
LE:	<u>Ibid.</u> , America, except USA
LF:	<u>Ibid.</u> , Europe
LG:	<u>Ibid.</u> , Asia, Africa and Oceania
LH:	College and schools magazines and papers
LJ:	Student fraternities and societies, USA
LT:	Textbooks.

TABLE NO. 13: A Frequency Distribution of Education Citations, by Doctoral Program and Citation Status in Gleeson and Kendrick Libraries: A Chi-Square Test

PROGRAM	IN COLLECTION	NOT IN COLLECTION	TOTAL
C/I:	215	73	288
EP/C:	150	45	195
ME:	206	122	328
O/L:	337	206	543
PSA:	46	22	68
Total:	954	468	1422

*Calculated chi-square: 24.95, 4 df.

*Tabled chi-square: 18.46, 4 df., $\alpha = .001$

TABLE NO. 14: A Frequency Distribution of Non-Education Citations, by Doctoral Program and Citation Status in Gleeson and Kendrick Libraries: A Chi-Square Test

PROGRAM	IN COLLECTION	NOT IN COLLECTION	TOTAL
C/I:	439	124	563
EP/C:	695	273	968
ME:	364	213	577
O/L:	858	385	1243
PSA:	64	26	90
Total:	2420	1021	3441

*Calculated chi-square: 32.32, 4 df.

*Tabled chi-square: 18.46, 4 df., $\alpha = .001$

CHART NO. 1: A Holistic Empirical Description of
the Sample Dissertations' Citation Pattern:
A Factor Analytic Study

	Eigenvalue	Percent	Cumulative Percent
1	1.6029	40.07	40.07
2	1.4230	35.58	75.65
3	0.7112	17.78	93.43
4	0.2629	6.57	100.00

The first 2 components will be retained.

Unrotated component loadings (eigenvectors)

	1	2
CITA1	0.296	0.844
CITA2	0.624	0.599
CITA3	0.767	-0.478
CITA4	0.734	-0.351
Variance	1.603	1.423

Variable Communality

CITA1	0.801
CITA2	0.748
CITA3	0.817
CITA4	0.661

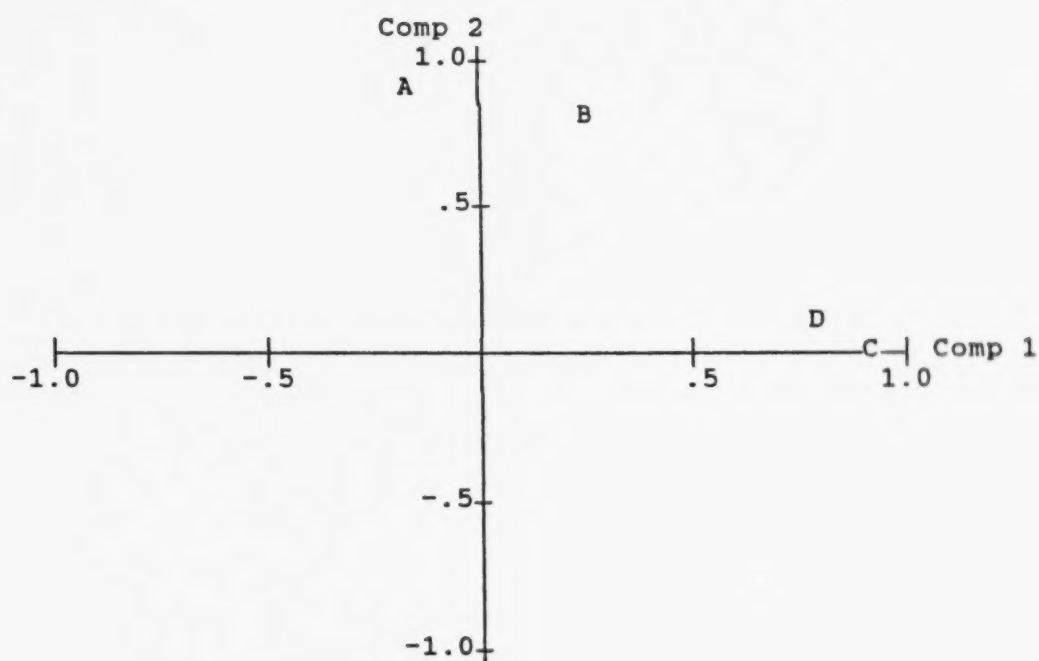
Varimax rotated component loadings

	1	2
CITA1	-0.171	0.878
CITA2	0.235	0.832
CITA3	0.903	-0.025
CITA4	0.810	0.068
Variance	1.557	1.469

Chart 1

Transformation matrix

	1	2
Component 1	0.50559	-0.86277
Component 2	0.86277	0.50559



Symbols used for variables in plot

A CITA1

B CITA2

C CITA3

D CITA4